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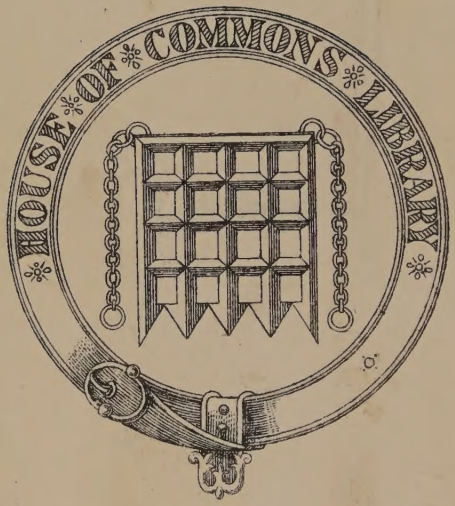

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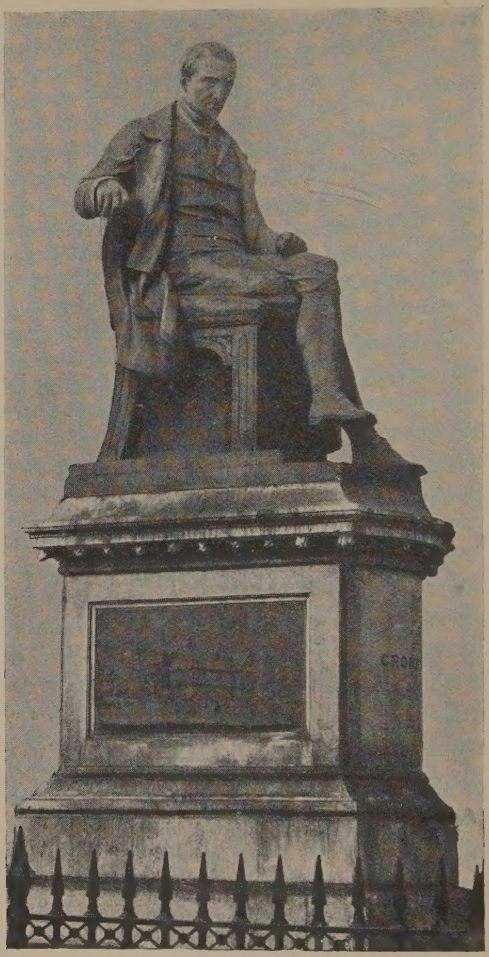

STATUE OF SAMUEL CROMPTON

NELSON SQUARE, BOLTON

On the base there is a representation of Hall-i'-th'-Wood which can just be distinguished in the photograph

THE EARLY ENGLISH COTTON INDUSTRY

WITH SOME UNPUBLISHED LETTERS OF SAMUEL CROMPTON

BY

GEORGE W. DANIELS, M.A.

SENIOR LECTURER IN ECONOMICS IN THE UNIVERSITY OF MANCHESTER

INTRODUCTORY CHAPTER BY

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PROFESSOR OF ECONOMIC HISTORY IN THE UNIVERSITY OF MANCHESTER

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PREFACE

In view of what is said by Professor Unwin in his introductory chapter concerning the business material of the firm of M'Connel & Kennedy, the reason why this small volume has been written requires little explanation. From the time this material was kindly placed at our disposal by Mr. J. W. M'Connel, grandson of one of the founders of the firm, my interest has been centred mainly in the development of the English cotton industry from its beginning to about the end of the third decade of the nineteenth century.

Fortunately this investigation fitted in well with work on which I was already engaged. For some time previously the preparation of lectures for students of the Tutorial classes, conducted by the University of Manchester in conjunction with the Workers' Educational Association, had caused me to turn my attention to the sources of the social and economic history of the late seventeenth and the early eighteenth centuries, with the object of enabling me to speak with a little more confidence than I could gain from easily accessible books.

Last summer when I began that which has developed into the following chapters my intention was to write a few pages of introduction to the succeeding letters of Samuel Crompton, and later to publish a volume dealing with the English cotton industry throughout the period mentioned. Much of what appears in this volume was intended to form the first part of that work, but the second part has been left for a separate volume. There are, therefore, many gaps and deficiencies in the present volume. Some of these gaps, I trust, may be filled and deficiencies supplied at a later date.

My obligations are very numerous and in some cases

extend to much more than appears in this volume. To the late Humphrey Chetham I am indebted for providing in Manchester the library which bears his name, in the reading-room of which I have spent so many delightful hours.

Mr. H. Crossley, the present librarian, has rendered me untiring assistance in searching out the authorities that I have used, as have the librarians of the Manchester Reference Library and the Christie Library. Miss F. Collier has assisted me in many ways, but particularly in the tedious task of wading page by page through the *Journals of the House of Commons* and the files of *The Manchester Mercury* and making extracts therefrom. Miss P. Heap has sketched the map from the one published in 1795 with Aikin's *Thirty to Forty Miles Round Manchester*. The Corporation of the Royal Exchange Assurance, through its Manchester manager, Mr. J. Loudon, has granted me permission to reproduce the photograph of the model of Manchester in the seventeenth and early eighteenth centuries. The model has been constructed by Mr. H. Yates of Moss Side, Manchester, and is a remarkable piece of work. It is based upon "A Plan of Manchester and Salford, taken about 1650" (referred to on p. 25) and must have involved an enormous amount of research, as by far the greater part of its detail is based upon contemporary documents and prints. It is to be hoped that before long the model may find a permanent resting-place in some Manchester public institution.

Too late for me to avail myself of the information they contain, I find that Mr. Loudon has published a series of articles in *The Royal Exchange Assurance Magazine*, entitled "Manchester Memoirs." In writing these articles Mr. Loudon has made use of such records of the Corporation as were not destroyed when the Royal Exchange was burned down in January, 1838. Sufficient remain, however, to indicate their value in the elucidation of the social and economic history of the Manchester district in the eighteenth century, and the part that was played

by the Corporation in its development. Records are still in existence of policies taken out by prominent Manchester business men at that time, including one by Richard Arkwright, in 1785, when he insured his Manchester factory for £5000.

In addition to the persons already mentioned, I am indebted to Mr. Thomas Midgley, Curator of Chadwick Museum, Bolton, for valuable information and for the photograph of Crompton's statue; to Mr. J. Wadsworth, of the staff of *The Manchester Guardian*, for important references; to Mr. H. L. Beales, of the University of Sheffield, for compiling the index; and to Professor D. H. Macgregor for reading my proofs. To Mr. H. M. M'Kechnie, the Secretary of the University Press, I am deeply grateful, as he has advised my every step while the book has been passing through the press, and has helped me in many other ways.

But my greatest debt is to Professor George Unwin. Whatever taste for social and economic history I now possess, or may acquire, I owe to him. He has contributed far more to this volume than the introductory chapter. But my deepest obligation is for his companionship, which for many years has been to me a constant source of encouragement and inspiration.

G. W. D.

THE UNIVERSITY, MANCHESTER,
June, 1920.

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ERRATA

Page 12, footnote 1, *for* "*ibid*" *read* "*Growth of English Industry and Commerce*, ii."

„ 19, „ 1, *for* "*S.P.D.*, Petition Entry Book" *read* "*ibid.*"

„ 144, „ 1, *after* "*Petitions*" *read* "(1803)."

„ 149, line 13, *for* "reference" *read* "references."

„ 159, „ 19, *for* "1825" *read* "1827."

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INTRODUCTION

I

In the year 1906 one of the oldest and largest firms in the cotton industry, that of Messrs. M'Connel & Co. Ltd., published, under the title of *A Century of Fine Cotton Spinning*, a brief history of their business, including some deeply interesting extracts from their earliest letter-books. The use of this material in 1913, when a second edition had been issued, by a research student of the University, Mr. W. Bradburn, M.A., prompted inquiries about the original sources and led to the discovery of what is probably a unique set of economic documents—the entire record of a great industrial and commercial enterprise during the forty years of its most rapid expansion. In an upper storey of one of Messrs. M'Connel's mills in Ancoats, Mr. Daniels and myself found not only a great array of day-books, cash-books, ledgers and letter-books for the period 1795-1835, but also the whole correspondence, invoices, receipts, etc., of the firm neatly endorsed and carefully packed year by year into tin boxes, each box having the date duly painted upon it. It almost seemed as if the firm had from the first foreseen the lively interest which their achievements would excite in the economic historian of the future, and the fact that one of its early members, Mr. John Kennedy, made a number of valuable contributions to the history of the cotton industry in the Transactions of the Manchester Literary and Philosophical Society and elsewhere lends reasonableness to this supposition.

These records were generously placed at the disposal of the University for the purposes of research. They have already enabled Mr. Daniels to cast much new light

on the vicissitudes of the cotton trade during the revolutionary and Napoleonic wars, and he hopes in time to illustrate by their aid many aspects of the cotton industry during the most important period of its development. In the meantime a new stimulus has been given to the investigation of origins. These had never been exhaustively studied, and the discovery amongst Messrs. M'Connel's business correspondence of a series of original letters of Samuel Crompton which, though written in the year 1812, are concerned with his invention of the mule, more than thirty years before, furnished an additional reason for the reconsideration of the earliest history of the industry which has been attempted in this volume.

From the earliest recorded times down to the period of the Industrial Revolution, the textile crafts and the commerce based upon them had in more than one important sense occupied a central position in economic history. The weaving of home-spun fabrics had always furnished the main transitional link between the world of the self-subsisting agriculturalist and the world of specialised industry. Moreover, this almost universally diffused domestic manufacture, organised for the supply of distant markets, represents a phase of industrial development historically intermediate between the "handcraft system" of the mediæval city and the factory system of the nineteenth century; and the fabrics thus produced, the silks of China, Italy and France, the cottons of India and Central Asia, the fine woollens of Flanders and Florence, the kerseys and broadcloths of England, the linens of Holland and Silesia, the fustians of Barcelona and Bavaria, have been in turn during twenty centuries amongst the chief commodities of international and intercontinental trade.

For these reasons the story of the textile crafts affords better illustrations than could be obtained from any other source of three of the main aspects of economic history—*i.e.* (1) that of social differentiation and the formation of classes; (2) that of the development of industrial and commercial organisation, and (3) that of the development

of the industrial and commercial policies of modern states. That the Lancashire cotton industry possesses this representative character is a commonplace. In no other modern industry can the emergence and separate organisation of a wage-earning class, the development of the factory system and the world market, the story of industrial legislation and of British commercial policy in the nineteenth century be so adequately studied.

But the cotton industry is, as Mr. Daniels has shown, a new graft on an old stock. Long before it passed under the factory system it was organised on a capitalist basis, derived in all probability from the fustian manufacture which it had displaced. The account of the disputes of the smallware and check weavers with their employers in 1758-1759, and of their formation and enforced repudiation of box clubs, shows clearly that whilst, as regards their economic dependence on their employers, their status differed little from that of the hand-loom weaver in the early nineteenth century; their methods of combined action were essentially the same as those that prevailed amongst the textile crafts in the fifteenth century. A brief consideration, therefore, of the earlier phases in the organisation of labour and capital in the textile industries as a whole may serve to place the modern cotton industry on the right historical perspective and help to account for the unique rapidity of its expansion.

II

It is in the first half of the twelfth century that we get the first evidence of the production of cotton fabrics in the Christian countries of Europe. Edward Baines, who in his excellent and scholarly account [1] of the origins of the cotton industry dated its European beginnings from the reign of Abderahman the Great (A.D. 912-961) in Moorish Spain, and showed that it had become well established in Barcelona by the thirteenth century, could not find any trace of it in Italy before the beginning of

[1] Baines, *History of Cotton Manufacture*, pp. 38-43.

the fourteenth century. Recent research [1] has, however, proved that by the middle of the twelfth century there already existed a flourishing export trade from Genoa to the Levant of the fustians of Northern Italy and Tuscany and of the light cottons (pignolato) of Piacenza; so that the fustians which are found on sale at the Champagne fairs [2] at that period were probably from Italy as well as from Spain. The frequent mention of cotton wool and yarn as articles of commerce makes it probable that fabrics containing cotton were produced in Flanders during the fourteenth century. At the same time a fustian manufacture began to grow up around Ulm and Augsburg, deriving its cotton supplies through Venice, which acquired a European reputation in the sixteenth century.[3]

Of the great range of new social classes engaged in, or concerned with, the textile industries that were built up during the Middle Ages by the creative energy of free fellowship, it is impossible here to attempt any account. There were gilds of weavers which secured in the twelfth century chartered right of marketing and autonomy before the rise of municipal self-government [4]; gilds of importers and exporters of cloth formed amongst the wealthy class that administered the first forms of civic independence [5]; gilds of tailors or cloth-cutters (Gewand-schneider) that attempted to monopolise the right to retail trade [6]; gilds of small masters in the auxiliary crafts—of fullers, dyers and shearmen seeking to maintain an independent contact with the market [7];

[1] A. Schaube, *Handelsgeschichte der romanischen Völker des Mittelmeergebiets*, pp. 159-160.

[2] F. Bourquelot, *Études sur les foires de Champagne*, i. 273.

[3] E. Nübling, *Ulms Baumwolleverei im Mittelaltes* in *Schmollers Forschunsen*, Bd. IX.

[4] Ashley, *Economic History*, vol. i., pt. i., ch. 3. Unwin, *Gilds and Companies of London*, pp. 42-46.

[5] Unwin, *Industrial Organisation*, pp. 30-31: A. H. Johnson, *History of Drapers Company*, i. G. des Marez, *Organisation du Travail à Bruxelles*.

[6] Keutgen, *Der Grosshandel im Mittelalter* in *Hansische Geschichtsblätter*, 1901, p. 67.

[7] Unwin, *Industrial Organisation*, pp. 32-36.

and finally, gilds of wage-earning journeymen who never secured full recognition of their right to a separate organisation. The conflict between these class interests was a main factor in municipal politics during the fourteenth century and culminated not infrequently in revolution.

In 1345 a dispute at Ghent between the fullers and their employers, the weavers and clothmakers about a piece-work rate led to a pitched battle in which hundreds were slain.[1] For a few months during the Ciompi rising of 1378 the nine thousand textile wage-earners of Florence maintained themselves by a temporary transformation of the gild constitution on an equal footing with the wealthier classes of the city, but were then obliged to fall back on that Friendly Society form of organisation out of which the Lancashire weavers in the eighteenth century constructed their later trade unions.[2] Elsewhere in many places the struggle of the town wage-earners for recognition was carried on with varying success during the fifteenth century. In 1453 the journeymen fullers of Brussels formed part of an international federation comprising forty-two towns and cities whose objects were to limit the supply of labour and to exclude all workers from towns in their black list.[3] The journeymen weavers followed the example of the fullers and their black list included the whole of England as well as the cities of Malines and Ypres. The records of the last successful strike of the fullers of Leyden in 1478 show that their fraternity, though it included small masters, was mainly representative of the journeyman class.[4]

From that time till the end of the seventeenth century we hear little of the activities of the journeymen. In all cases where they expanded, the textile industries outgrew the limits of the town economy and drew supplies

[1] W. J. Ashley, *James and Philip van Artevelde*, pp. 162-163.
[2] A. Doren, *Die Florentiner Wollentuchindustrie*, pp. 124-242.
[3] G. des Marez, *Organisation du Travail à Bruxelles*, pp. 118-119, and *Le Compagnannage des Chapelier Bruxellois*, pp. 17-19.
[4] *Bronnen tot de Geschiedenis van de Leidsche textielnijverheid*, I. xxi. Ed. N. W. Posthumus.

both of capital and labour from sources outside the corporate boroughs and the gilds. The textile workers became in every country a much larger and more important section of the community than before, but their centre of gravity shifted from the journeyman wage-earner to the working master who was essentially a small capitalist and receiver of credit, and whose economic well-being depended primarily upon a free flow of capital and credit.[1] It remains to consider briefly how this was affected by the mercantilist policy of the state.

III

Capitalist employers and even, to some extent, our wage-earning proletariat were to be found as early as the close of the thirteenth century in the chief urban centres of the textile industries in Flanders and Italy; and at first sight there seems little to distinguish the industrial conditions and the class relations prevailing in those centres from those described as existing in Lancashire between the sixteenth and the eighteenth centuries. The patrician draper of Douai in the last quarter of the thirteenth century [2] ran his business on lines which we find still maintained by the Chethams and the Mosleys of seventeenth-century Manchester. In both cases the capitalist was primarily a merchant with agents or partners in other cities, who bought his raw material from abroad and helped to put his goods on a distant market. At the industrial centre he had a warehouse and also a workshop where he employed a few workers chiefly in finishing the cloth or in preparing the material for manufacture. But his relation with most of those who were in effect his workpeople was ostensibly that of a trader. He sold them the materials of their craft and

[1] Unwin, *Industrial Organisation in the 16th and 17th Centuries*, pp. 52-61, 126. *Commerce and Coinage in Shakespeare's England*, i., p. 330.

[2] G. Espinas, *Jehan Boine Broke, Bourgeois et drapier-Douasien* in *Vierteljahrschrift für Social und Wirthschaftsgeschichte*, vol. ii., pp. 53-70.

bought the finished products, allowing them credit for the interval.

The other form of industrial organisation found in eighteenth-century Manchester, in which the materials were delivered through putters-out to the cottage workers of the surrounding country, had been already fully developed by the Wool Gild of fourteenth-century Florence.[1]

What constitutes the vital difference between the conditions at Douai and Florence on the one hand, and those in Lancashire on the other hand, was the virtual monopoly of the employing function and of the supply of capital or credit which the civic constitution of the thirteenth and fourteenth centuries gave to the patrician merchant or to the members of the wool gild, and which was entirely absent from the Manchester fustian or cotton industry. The weaver who obtained his materials from the Chethams or Mosleys might, if their terms were better, have got credit from the Irish yarn dealers or other "foreigners" who visited the Manchester market, and he was free to set up as an independent manufacturer as soon as he had acquired the necessary capital or credit. Such freedom, however, was by no means universal or even normal in the textile industries of sixteenth-century England. A monopoly of the employing function had grown up in the corporate burghs which were the older centres of the industry and the effect of the industrial and commercial policy of the sixteenth century was to give a national sanction to this monopoly, and to put a ban upon expansion or improvement.

One of the main instruments of that policy was the company of Merchant Adventurers. This was a *cartel* of English merchants, mainly Londoners, which had gradually gained a control of the export trade of cloth to Antwerp—the chief Continental market. Throughout the sixteenth century it sought to prevent the English clothier from exporting his own cloth and the foreign merchant from coming to buy it in England. At the

[1] A. Doren, *Die Florentiner Wollentuchindustrie*, chap. v.

same time it restricted the number of its own members and limited the amount of trade done by each. So far, therefore, from having been, as is commonly supposed, the main organ for the expansion of English trade, it constituted, in fact, the main hindrance to that expansion. In 1551-1552 the government of Edward VI., in order to raise from the Adventurers a desperately needed loan, gave an official sanction to their monopoly. It stopped the trade of the Hanseatic merchants who had recently been exporting over one-third of the rapidly increasing output of English cloth,[1] and it authorised the Adventurers to exclude other native merchants from the trade. As the Adventurers could not find a market for the whole national output, they complained of overproduction.[2] The corporate boroughs which were the older privileged centres of the industry naturally supported this complaint, and a series of enactments from 1552 to 1563 (including the Statute of Weavers and the Statute of Apprentices) which endeavoured to restrict the expansion of the textile manufactures in the country districts were largely due to the combined influence of these two vested interests and to the fiscal needs of the Government.

The Hanseatic trade was restored under Philip and Mary, and during the first half of Elizabeth's reign the German merchants continued to find a market for a considerable quantity of English cloth.

This additional channel through which capital and credit could flow in and out of the country was rendered more indispensable by the gradual stoppage of trade with Central Europe through the Netherlands. But in the second decade of Elizabeth fresh hostilities arose between the Merchant Adventurers who had settled at Hamburg and the Hanseatic League with the result that the German merchants were in 1576 excluded from trading in Blackwell Hall, and later in 1580 deprived of

[1] J. M. Lappenberg, *Urkundliche Geschichte des Hansischen Stahlhofes zu London*, p. 175.
[2] *Acts of the Privy Council for 1550*, p. 19.

all their remaining privileges in England, whilst the Adventurers lost their foothold in Hamburg.[1] At the very moment when the foreign channels for the export trade were thus being closed the native channels were being seriously narrowed through the action of the same vested interests. The monopoly of the Merchant Adventurers extended only to the Low Countries and Germany. The trade with Spain and the Baltic, with Venice and the Levant and Morocco had been free to all Englishmen and had been opened up by enterprising merchants, frequently from the lesser parts, who more truly deserved the title of Adventurers than the corporate monopolists of the markets nearer home. But between 1575 and 1588 each of these branches of foreign commerce was monopolised by a chartered syndicate formed after the model of the Merchant Adventurers and controlled largely by the same group of Londoners. Prices went up by leaps and bounds. "When every nation," said Harrison, "was permitted to bring in her own commodities . . . we had sugar for fourpence the pound that now . . . is well worth half-a-crown, raisins and currants for a penny that now are bidden at sixpence. I do not deny that the navy of the land is in part maintained by their traffic, but so is the price of wares kept up now that they have gotten the only sale of things upon pretence of better futherance of the common wealth into their own hands."[2]

Far more serious, however, was the monopoly of the export trade in cloth. In 1586 the Privy Council was receiving alarming reports of the discontent in Somerset. The poorer sort, who were wont to live by spinning, carding and working of wool, were starving for lack of work and on the point of rebellion. An accidental fire at Bath was taken for a beacon lighted to proclaim a general rising. "This great matter of the lack of work," writes Burleigh to Hatton, "not only of cloths, which presently is the greatest, but of all other commodities

[1] R. Ehrenberg, *Hamburg und England*, chap. iv.
[2] W. Harrison, *Description of England*, Book III., chap. iv.

which are restrained from Spain, Portugal, Barbary, France, Flanders, Hamburg and the States, cannot but, in process of time, work a great change and dangerous issue to the people of the Realm, who heretofore in time of outward peace lived thereby, and without it must either perish for want or fall into violence to feed and fill their lewd appetites with open spoil of others, which is the root of rebellion."

The remedy proposed by Burleigh was to undo at one stroke the whole effect of the restrictions that had been accumulating since 1564. To have more sales there must be more buyers and more ships. The Hanseatic trade must be restored. Other alien merchants must receive the same liberty and be encouraged to use it by lower export duties.[1] Blackwell Hall must be opened again to German buyers, and if the Londoners refused, a cloth hall must be set up at Westminster. Finally, the exportation of cloth must be free to all English merchants whether members of the Adventurers' Company or not.[2] But the application of these sound remedies was frustrated by the war with Spain and the reign of Elizabeth closed with a period of intensified monopoly and of commercial depression.[3]

The expansion of the textile industries of England, which there is no reason to doubt was taking place at this period, is clearly not to be placed to the credit of Elizabethan statesmanship. It took place almost entirely in the district exempted from the Weavers Acts. Foremost amongst those districts were Lancashire and the West Riding, which thus enjoyed the advantages of comparative *laissez faire* at a time when restrictions on the creation and the free flow of capital were part of the accepted national policy.

[1] W. R. Scott, *Joint Stock Companies*, 1720, i., p. 88.
[2] Eliz., *State Papers Domestic*, cci.
[3] W. R. Scott, *op. cit.*, i., chap. v.

IV

The importance for the expansion of British industry of the subsequent removal of those restrictions can be best understood if we compare the conditions under which English woollen industry was developing at the close of the sixteenth century with those that prevailed in the cotton industry at the close of the eighteenth century. In the earlier period, of course, there was nothing to correspond to the jenny, the mule, and the steam-engine. But certain conditions quite as essential to the development of the industry are common to both cases—above all, a rapid accumulation of new capital and a simultaneous expansion of organising ability. It was a vital factor in both these developments that the capital and ability accumulating in one field should be free to flow over into and fertilise other fields.

This is clearly shown in the instructive case of William Radcliffe, whose account of the transition of the cotton industry to the factory system has been critically discussed and set in a new light by Mr. Daniels. William Radcliffe commenced working life as a hand-loom weaver at Mellor. Any young man, he tells us, of moderate ability and self-confidence could have got on at that time. The capital accumulating in his hands enabled him to give out work, exactly as a sixteenth-century clothier would have done, to all the villages round. Within about fifteen years he was finding employment for one thousand hand-looms; he had £11,000 invested in the business; a bank gave him credit for £5000. Most of this capital and credit was employed, not in the manufacture itself, but in trade. It was represented by large quantities of piece goods on their way to the consumer, but still unsold. The new captain of industry could not extend his enterprise unless he used his capital to find a new market. For this purpose Radcliffe took as his partner a young Scot with more education than himself, who brought another Scot into the business, and who regularly visited Frankfort and Leipzig to open a

market for the firm's muslins. Or let us take the case of David Dale, the father-in-law of Robert Owen and the founder of the New Lanark Mills. He commenced life, like Radcliffe, as a hand-loom weaver, but soon became clerk to a mercer who very likely found work for weavers. Then we find him importing foreign yarns to set weavers at work on his own account and taking in a partner to help him. With the capital thus acquired he started a whole series of spinning mills—the first in Scotland—and the need of finding an outlet for his yarns led him to extend his operations to weaving and dyeing. Finally, as he was getting on in years, he disposed of his manufacturing interests to younger and more energetic men like his son-in-law, and withdrew his own capital and organising ability into the less speculative field of banking. In the cases of Dale and Radcliffe we see capital accumulated in industry flowing over into commerce and banking. But all were not so successful as Dale. Even Radcliffe came to grief in his later years and was dependent on the capital of others. And in many cases capital and credit are to be observed flowing in the opposite direction. The merchant who imported cotton enabled the young manufacturer to set up for himself by giving him three months' credit, whilst the exporting merchant rendered similar assistance by paying for the manufacturer's output week by week. It was in this way, by a flow of capital inwards from commerce, that most of the early industrial enterprises of Lancashire got started and the immense expansion of the cotton industry was rendered possible. One other example will serve to complete the account and to show the international significance of the development at the moment when Radcliffe was sending out his partner to Germany. Nathan Meyer Rothschild was buying Manchester goods at Frankfort for transmission to more easterly markets. Some quarrel with a Manchester merchant led him to think that he could make better use of his capital by settling in Manchester himself. His father supplied him with £20,000, and he arrived to take part in an almost

feverish expansion of the industry. He found there were three separate profits to be made in the manufacture: one upon the supply of the raw material, one upon the manufacturing, and one upon the dyeing and spinning. His capital and organising ability enabled him to combine all three. In half-a-dozen years he had turned his £20,000 to £60,000, and then, obeying the instinct of his race and following the signs of the times, he withdrew his capital to banking and became one of the leading figures in the London money market.[1]

Enough has been written—perhaps too much—by way of introduction to the new and valuable chapters which the researches of Mr. Daniels have added to the history of the Lancashire cotton industry—enough if I have succeeded in indicating the historical background of the industry and the world-wide character of the development—too much if I have anticipated here and there some of the more important conclusions that Mr. Daniels has drawn from his investigations.

G. UNWIN.

[1] *Memoirs of Sir T. F. Buxton*, ed. by his son, 288-289.

THE EARLY ENGLISH COTTON INDUSTRY

CHAPTER I

THE DEVELOPMENT OF A COTTON MANUFACTURE

I

At the present time the British cotton industry, which is almost entirely localised in Lancashire and in the adjoining parts of Cheshire and Yorkshire, is the largest of the world's textile industries.[1] The year 1770, immediately after Arkwright obtained his first patent, marks a well-defined division in its history. From this date expansion became conspicuous and the industry became definitely organised on the lines of the factory system. Previously expansion had been comparatively slow, and the domestic system of organisation had prevailed. The expansion of the cotton industry, therefore, is an outstanding example of the transition which is now known as the Industrial Revolution—a movement which, it is not too much to say, found its centre within the area in which the cotton industry is now concentrated, and from thence has spread to all the economically advanced countries of the world. In the following pages we shall be mainly concerned with the earlier period and with some aspects of the transition, and it is hoped that some light will be thrown upon the question as to what the transition

[1] Outside the area mentioned, Glasgow and neighbourhood is the only centre in the United Kingdom where the industry is carried on to a considerable extent (*Report of Committee on Textile Trades* (1918), pp. 45, 49. (Cd. 9070)).

involved, particularly as regards the organisation of the cotton industry, and the economic relationships of the classes engaged therein.

At what date cotton was first used in the manufacture of cloth in England is somewhat obscure. When Baines wrote his *History of the Cotton Manufacture* he had found only two references to the import of cotton-wool from the end of the thirteenth to the beginning of the sixteenth centuries,[1] and it has generally been assumed that, during this period, it was imported only in small quantities, and used for minor purposes, such as candle-wicks. It has recently been shown, however, that, throughout the intervening centuries, cotton was a common article of import, figuring in the customs at many English ports,[2] and while as yet there is little evidence as to its uses, the knowledge of its regular import suggests that it may have been put to more important uses than that just mentioned.

Cotton cloth, or cloth partly made of cotton, had been imported long before the sixteenth century, and, in the early years of that century, there is ample evidence of its import, as well as an increasing amount of evidence of the import of the raw material.[3] About the same time the word "cottons" as the name of a cloth manufactured in Lancashire becomes conspicuous. In 1514, in a statute regulating the manufacture of cloth, cottons are mentioned, but are excluded from its provisions, as they are from the provisions of a similar statute twenty

[1] Published in 1835, p. 96.

[2] Gras, *The Early English Customs System* (1918), pp. 119, 161, 167, 193, 222, 271, 452, 503, 554-555, 635, 647, 696. In 1507 there is an entry of cotton wolle "spowne."

In a *Chronological History of Bolton to 1875*, compiled for *The Bolton Chronicle*, it is stated that cotton yarns were spun at Horwich in 1510.

[3] Fustians were imported into Lynn at the end of the fourteenth century, and there are many references to the import of cotton-russet in 1509 (Gras, *ibid.*, pp. 436, 581 *et seq.*). In the inventory of the goods of Alexander Staney (1477) "12 yards of white osborner fustian" are mentioned (*Lancashire and Cheshire Wills*, Chetham Society, vol. iii., N.S.).

years later.[1] Also Hakluyt records the fact that, between the years 1511 and 1534, cottons were included among the cloth exports of the country,[2] and about the year 1538 we get Leland's reference: "Bolton upon Moore Market stondith most by cottons and cowrse yarne. Divers villages in the Mores about Bolton do make cottons." [3]

Until the middle of the century it appears that the manufacture of cottons was unregulated, but in 1551 a comprehensive statute was passed relating to the manufacture of cloth throughout the country, and "all and everie cottonnes called Manchester Lancashire and Cheshire Cottonnes" and "all cloths called Manchester Rugges otherwise named Friezes" were included within its scope.[4] By the regulations of this statute, the lengths, breadths and weights of these cloths were fixed, and also the amount of stretching to which they could be subjected. After this time the regulations were continued and modified in numerous statutes enacted during the remainder of the sixteenth century and in the early seventeenth century.

The next important statute affecting the Lancashire cloth industry, however, was the Weavers' Act of 1555.[5] The main purpose of this Act was to prevent the increase of clothiers outside corporate towns, and, to secure this end, country clothiers were forbidden to have more than one loom each in their possession, while country weavers were limited to two looms, and also to two apprentices. Every weaver had to serve a seven years' apprenticeship, and no person not already engaged in weaving or in causing to be woven any kind of broad

[1] 6 Hen. VIII., c. 9; 27 Hen. VIII., c. 12. In view of what will be said later, it may be noticed that, in the first of these statutes, regulations were laid down regarding the delivery of wool, by clothiers, for breaking, combing, carding and spinning, and the amounts of wool or yarn to be redelivered by workpeople.

[2] Baines, *History of the Cotton Manufacture*, p. 96.

[3] *The Itinerary of John Leland*, edited by Thomas Hearne (1711), vii., p. 41.

[4] 5 and 6 Edw. VI., c. 6.

[5] 2 and 3 Philip and Mary, c. 11.

white woollen cloth was allowed to begin, except in towns or in places where such cloth had been commonly made for the last ten years.

When the Act was passed, York, Cumberland, Northumberland and Westmorland were exempted from its provisions, but Lancashire was included. At this time the county was still largely a country district with a cloth industry that had not yet become famous, though there is much evidence that it was expanding. Consequently, had the Act remained unmodified, the development of the county and the expansion of its industry might have been seriously checked. Two years after its enactment, however, several additional counties were exempted from its provisions, except as regards apprenticeship, and Lancashire and Cheshire were included among them.[1]

From the beginning, considerable difficulty was experienced in regulating the manufacture of cloth in Lancashire. In the 1551 Act, the breadth allowed for Manchester cottons and friezes was narrower than for ordinary cloths, and when the Weavers' Act was modified a provision was introduced which allowed them to be made in half-pieces. By 1566 more serious difficulties had been revealed. In an Act passed in that year,[2] it was stated that clothiers "inordinately seeking their own singular gains" were accustomed to carry away divers cottons, friezes, and rugs, and sell them before the Aulnager had fixed the Queen's seal on them, and in some instances they had even counterfeited the seal. To meet these difficulties it was enacted that deputy Aulnagers should be appointed, to be situated at Manchester, Rochdale, Bolton, Blackburn and Bury. In view of the fact that, about this time, in addition to these places, the cloths were mentioned in connection with Salford,

[1] 4 and 5 Philip and Mary, c. 5. Ashley, *Economic History* (1909), vol. i., pp. 233-235. Unwin, *Industrial Organisation in the XVIth and XVIIth Centuries* (1904), pp. 92-93. In 1558-1559 and 1575-1576 other places were exempted, and in 1623-1624 the Act was finally repealed.

[2] 8 Eliz., c. 12.

Leigh and Radcliffe,[1] it is probable that their manufacture was so extensive that, even if the clothiers had been more willing to conform to the regulations, the task of the Aulnager was too large to be efficiently performed.

But there were other difficulties. The clothiers protested that it was impossible for them to conform to the lengths, breadths, and weights laid down in the statutes without the undoing of great numbers of poor people commonly engaged in making the cloths, and further alterations had to be made. The alterations were mainly in the direction of allowing the cloths to be made considerably lighter, but ten years later a writer condemned all kinds of northern cloths for false dyeing, for shortness of weight and for stretching.[2]

By the last years of the sixteenth century the problem of regulation was still unsolved, and apparently it was decided that even more vigorous measures should be adopted. In 1597 an Act [3] was passed "against the deceitful stretching and tentering of Northern cloth," and, in the preamble, it was stated that notwithstanding the many good and wholesome laws enacted hitherto, the cloths had grown worse and worse, were more stretched and strained, and were made lighter than ever before. The remedy adopted was to prohibit all tenters or engines for stretching cloth in the northern counties, and the Justices of Peace had to appoint overseers to enforce the regulations as to length and weight. In the year following the enactment of this statute a report was sent to the Council,[4] in which it was stated that, although sundry letters had been written to the Justices

[1] *Vict. County Hist., Lancs.*, ii., p. 296.

[2] *State Papers Domestic, Eliz.*, vol. iii., 38. *Economic Journal*, x., p. 24. According to the 1551 statute, a piece of cottons had to be 22 goads in length, ¾ yard in breadth and 30 lbs. in weight. In 1566 the length had to be 21 goads or 20 goads at least, the same breadth as before, but only 21 lbs. in weight. In 1551 a piece of frieze had to be 36 yards in length, ¾ yard in breadth and 48 lbs. in weight. In 1566 the length was 35 to 36 yards, the same breadth as before, but only 44 lbs. in weight.

[3] 39 Eliz., c. 20.

[4] *S.P.D. Eliz.*, vol. cclxix. 45.

of Peace in Lancashire and Yorkshire, pointing out their duty in enforcing the statute, the regulations which it contained had not been observed. Consequently a recommendation was made that two honest men be appointed to inspect the making of kersies, northern dozens and cottons, with power to enforce the regulations. In the last year of Elizabeth's reign it was found necessary to pass another similar statute with application to the whole country.[1]

The mere record of the futile attempts to enforce these statutes is sufficient proof that they were inappropriate to the situation. During the sixteenth century considerable changes were taking place in the English cloth industry. It was the period when the "New Drapery" was being introduced and attempts were being made to regulate it on the lines of the "Old Drapery." The regulations never corresponded with the facts of the case and their effective enforcement was impossible.[2] It was not only the length, breadth, and weight of the cloths that caused difficulty. What were regarded as inferior materials were being introduced into them, something which the statute of 1551 attempted to cope with. This was not a new grievance at that time, but in the sixteenth century it may have had a new significance. In 1606 an attempt was made to distinguish between cloths made of perfect wool and those into which Flocks, Thrums, and Lambs' Wool entered, by insisting that the latter should have a black yarn on the one edge and only a selvedge on the other. Afterwards, no person had to put any Hair, Flocks, Thrums, or any yarn made of Lambs' Wool or other deceivable thing or things, in or upon any Woollen Cloth, Half-Cloth, Frieze, Dozen, Bays, Penistone, Cotton, Taunton Cloth, Bridgewater, Dunster Cotton, or any other cloth, upon pain of forfeiting such cloth.[3]

[1] 43 Eliz., c. 10.

[2] These facts are borne out in the writings of the apologists for regulation. *Cf.* John May, *A Declaration of the Estate of Clothing now used within this Realme of England* (1613).

[3] 4 Jas. I., c. 2.

At this point this reference is important for our purpose in the evidence it offers that, at this time, cottons were regarded as a species of woollen cloth. All the references in the sixteenth century have the same implication,[1] and even as late as 1700, when all duties, subsidies, etc., imposed by previous Acts were swept away, cottons were still enumerated among "manufactures of wool."[2] Moreover, the processes mentioned in connection with the making of cottons were those applicable to woollen goods. It appears, therefore, that cottons were not cotton fabrics in the modern sense. The cottons of the sixteenth century were an important manufacture not peculiar to Lancashire alone: they were made in other manufacturing districts. In an account of woollen goods exported between Michaelmas 1594 and Michaelmas 1595 the following figures were given:—baize, 10,976 pieces; cottons, 168,065 pieces; woollen stockings, 34,085 pairs; sayes, 4256 pieces; English Norwich, 339[3]; and, about the same time, Manchester cottons were enumerated among the principal exports of the country.[4]

But, while it can be definitely stated that cottons were regarded as woollen goods in the sixteenth century, it is hard to resist a suspicion that the vegetable fibre, cotton, may have been used in the manufacture of Lancashire cloths. The fact that they were regarded as woollens is not, of itself, conclusive, as, at that time, cotton was usually called cotton-wool.[5] Further, there is the

[1] At the end of the sixteenth century Camden referred to Manchester as "eminent for its woollen cloth or Manchester cottons" (*Britannia*, Gibson's edition (1772), ii., p. 143).

[2] 11 and 12 Wm. III., c. 20.

[3] *S.P.D. Eliz.*, vol. cclxiii. 122.

[4] *Ibid.*, vol. cclv. 56. In 1580 the merchants and citizens of Chester petitioned that Chester might be made the only port for Manchester cottons, which petition was ultimately granted (*Ibid. Add.*, vol. xxvi., 90. *Ibid.*, vol. clviii. 2). In 1605 it was stated that "the most part of English cloth transported for France is made up of the coarsest wools as kerseys, cottons, and bays, serving for linings" (*Ibid. Add.*, vol. xxxvii. 60).

[5] In the eighteenth century a writer well acquainted with Manchester manufactures still referred to cotton as wool (*Infra*, pp. 37-38).

circumstance of their comparatively light weight, and also the difficulty of their makers complying with the regulations laid down for them. Possibly these facts may be explained by the use of the materials mentioned in the statutes, and certainly similar difficulties appear to have been experienced over a wide range of fabrics. On the whole, the commonly accepted view, that Manchester cottons and other goods usually mentioned along with them were really woollen goods, appears to have justification, although, perhaps, it should not be stated without a caution.

II

Until recently there was no authentic evidence before 1641 that anything which might be called a cotton manufacture had become established in Lancashire. In that year, in the oft-quoted passage of Lewis Roberts, it was stated that "the towne of Manchester in Lancashire must be also herein remembered, and worthily for their incouragement commended, who buy yarne of the Irish in great quantity, and weaving it returne the same againe in Linen into Ireland to sell; neither doth the industry rest here, for they buy cotton woole in London that comes first from Cyprus and Smyrna, and at home worke the same, and perfit it into Fustians, Vermilions, Dymities, and other such stuffes; and then returne it to London, where the same is vented and sold, and not seldome sent into forrain parts, who have means at far easier termes, to provide themselves of the said first materials." The same writer also informs us that "the Levant or Turkey Company . . . brings . . . great quantity of cotton and of cotton yarne . . . into England." [1]

We are now indebted to an American investigator [2]

[1] *The Treasure of Traffike* (London, 1641), pp. 32-34.

[2] W. H. Price, "On the Beginning of the Cotton Industry in England," *Quarterly Journal of Economics*, vol. xx., pp. 608-613. He quotes from London Guildhall Library, vol. Beta, *Petition*

for the discovery of an earlier piece of evidence, in the form of a petition "as well of divers merchants and citizens of London that use buying and selling of fustians made in England as of makers of the same fustians" which is so important and not yet so well known that the relevant passages must be quoted: "About 20 years past divers people in this kingdom, but chiefly in the county of Lancaster, have found out the trade of making of the fustians, made of a kind of bombast or down, being a fruit of the earth growing upon little shrubs or bushes, brought into this kingdom by the Turkey Merchants, from Smyrna, Cyprus, Acra, and Sydon, but commonly called cotton-wool; and also of linen-yarn most part brought out of Scotland, and other some made in England, and no part of the same fustians of any wool at all, for which said bombast and yarn imported, his Majesty hath a great yearly sum of money for the custom and subsidy thereof. There is at least 40 thousand pieces of fustian of this kind yearly made in England, the subsidy to his Majesty of the materials for making of every piece coming to between 8d. and 10d. the piece; and thousands of poor people set on working of these fustians. The right honourable Duke of Lennox in 11 of Jacobus, 1613, procured a patent from his Majesty of alnager of new draperies for 60 years, upon pretence that wool was converted into other sorts of commodities to the loss of customs and subsidies for wool transported beyond seas; and therein is inserted into his patent, searching and sealing, and subsidy for 80 several stuffs; and amongst the rest these fustians or other stuffs of this kind of cotton-wool and subsidy and a fee for the same, and forfeiture of 20s. for putting any to sale unsealed, the

and Parliamentary Matters, 1620-1621, No. 16 (old No. 25). My attention was drawn to this reference by its being quoted by S. J. Chapman in *V.C.H. Lancs.*, ii., p. 380. Mr. Price also gives a reference (*State Papers Domestic*, lix. 5) of the presumed date, 1610, where a petitioner asks the Earl of Salisbury for confirmation of a grant made to him for reformation of frauds daily committed in the manufacture of "bombazine cotton such as groweth in the land of Persia being no kind of wool."

moiety of the same forfeiture to the said duke, and power thereby given to the duke or to his deputies, to enter any man's house, to search for any such stuffs and seize them till the forfeiture be paid ; and if any resist such search to forfeit 10l. and power thereby given to the lord treasurer or chancellor of the Exchequer, to make new ordinances or grant commissions for the aid of the duke and his officers in execution of their office."

The probable date of this petition is 1621, and its importance in relation to the beginning of the English cotton industry is evident. Although the " thousands " mentioned as employed in the making of fustians at the time is a stereotyped number in petitions, and may perhaps be somewhat discounted, the facts that a cotton manufacture had become established in England and that it had attained a considerable magnitude are placed beyond doubt.[1]

A little more light appears to be thrown upon the petition in a pamphlet which was published in 1613, the year in which the patent of the Duke of Lennox was extended [2] to include " 80 several stuffs ; and amongst the rest these fustians or other stuffs of this kind of cotton wool." The pamphlet was written by John May, a " deputie alneger " who at the time was out of office, under the title, *A Declaration of the Estate of Clothing now used within this Realme of England. With an Apologie for the Alneger showing the necessarie use of his Office*, and was dedicated in obsequious terms " to the Duke of Lenox . . . Alneger generall for the Realme of England and the Dominion of Wales." The writer was concerned with the deceits that had crept into the clothing trade generally, owing to lack of supervision, but he was particularly anxious about the " many sorts of cloth or stuffs lately invented which have got new godfathers to name them in fantasticall fashion that they which weare them, know not how to name them, which are generally called newe draperie." [3]

It is not without significance that in no part of his

[1] See note *infra*, pp. 195-196. [2] See *infra*, p. 197. [3] P. 22.

pamphlet does he give any inkling that he knew that any of the new goods were other than woollen goods, rather he implies the contrary.

Seeing that the Duke of Lennox secured the extension of his patent in the year this pamphlet was published, and that the writer was, at least potentially, an interested party, the connection between the two seems fairly clear. Moreover, his apparent lack of knowledge that some of the new cloths were not made of wool may help to explain the complaint in the petition, that fustians had been brought under regulation as though they were woollen fabrics.[1] At any rate, the pamphleteer specifically mentions fustians, among the new drapery, as requiring the attention of the Aulnager: "There is also a late commodite in greate use of making within the Kingdom which setteth many people on worke, called Fustians, which for want of government are so decayed by falsehood, keeping neither order in goodnesse nor assize, insomuch that the makers thereof, in this short time of use are wearie of their trades, and it is thought will returne again to the place whence it came, who doe still observe their sorts and goodnesse, in such true manner as by their seales they are sould, keeping up the credit of that which they make: what a shame is this to our nation, to be so void of reason and government, that a good trade should bee suppressed for want of good order amongst themselves, and have so good a president from others." [2]

[1] The fact that the writer of the pamphlet makes no mention of cotton in connection with fustians raises a speculation as to the character of the following species of new drapery. He certainly implies that it was something distinct from the "cottons" mentioned so frequently in the sixteenth century: "A sort of cloth is made called Manchester or Lancashire plaines to make cottons, which containe about a yard in breadth; these are often bought by merchants and others, which cut them to length according to a kersie, and hath them dressed and dyed in forme to a kersie, the which are not onely vented in foreign parts, but many of them vented in the Realme; which cloth proves very unprofitable in wearing" (p. 32).

[2] Pp. 33-34.

Whether or not the writer of the pamphlet knew of what materials fustians were made, in this passage he supplies further evidence that in 1613 their manufacture in this country was regarded as recent, and he also indicates that the manufacture had been introduced from some other country. According to Dr. Cunningham, the beginning of the new drapery "can be traced to the immigration of 406 persons who were driven out of Flanders in 1561 . . . where the cotton manufacture had been a flourishing industry," [1] and the immigration continued later in the century.[2] Dr. Cunningham surmised,[3] as did Baines when he wrote his book in 1835,[4] that the cotton manufacture was introduced into England by the immigrants, and that it commenced, therefore, in the second half of the sixteenth century. It would appear that their views have justification. Beginning at that time, a sufficient period would have elapsed by 1620 to allow the manufacture to grow to the stage indicated in the petition. Whether, in view of the considerations already adduced, cotton had been used in the manufacture of cloth before the immigrations must be left a doubtful question.

After the reference of Lewis Roberts in 1641 to the manufacture of fustians in Lancashire, there is no lack of evidence to the same effect. The first piece of evidence which may be noticed is of particular importance, in that it gives another indication of the extent of the industry, and suggests a fact which may have had a bearing upon its growth in this country.

At the beginning of 1654 trade in Lancashire, in common with the rest of the country, was in a state of depression owing to the restrictions on foreign intercourse consequent upon the Dutch War.[5] During the early months of the year petitions were presented to the Council by "traders for cotton wool, and fustians, and

[1] Cunningham, *ibid.*, pp. 82-83.
[2] Smiles, *The Huguenots* (1870), p. 56.
[3] *Ibid.*, p. 83.
[4] Baines, *ibid.*, p. 99.
[5] Scott, *Joint Stock Companies to 1720* (1912), i., p. 253.

poor weavers in Lancashire on behalf of themselves and several thousands" to allow the import of cotton-wool "to prevent the ruin of the great manufacture of fustians and the makers and weavers." [1]

In April, the following reasons were presented to the Council on behalf of the poor of Lancashire for liberty to bring in cotton-wool from France, Holland, etc. "The dearth of wool is worse to them than that of bread 3 years since, and now there are not 5 bags of wool in all the merchants' hands in Lancashire for 20,000 poor in Lancashire who are employed in the manufacture of fustians. Mr. Seed and Mr. Winstanley, who reported 150 or 200 sacks of prize-wool, that they might gain time to sell their own wool, now confess that it proved 20 or 30 bags and the sale was prohibited. Unless cotton-wool be brought much lower, the manufacture will revert to Hamburg, whence our cheaper making gained it, for they can buy wool at 6d. or 7d., and we have to pay 18d. or 20d. Whilst we can have no supply but from the Straits, and that through the Turkey merchants, we cannot be supplied at such rates as will preserve our manufacture from ruin, as we cannot raise the price of our fustians on account of the lower price at Hamburg viz. 16s. a piece which we cannot afford under 20s., though they used to be 12s. or 13s. We beg therefore a dispensation as regards wool from the Act which enriches strangers and destroys the people of this nation. Such laws were better buried in oblivion than to bury alive the poor." [2]

From these petitions it is evident that in 1654 there was a definitely established industry in Lancashire dependent for its prosperity upon regular supplies of cotton-wool. But, also, when what is known of the position in Germany in the first part of the seventeenth century is taken into account, the petition just quoted may have a further significance.

Whatever may have been the case in England prior

[1] *Calendar of State Papers Domestic*, lxvi., Feb. 1, 9.
[2] *Ibid.*, lxix. 7.

to the sixteenth century regarding the use of cotton in the manufacture of cloth, at that time it had been so used in Germany for more than two centuries. In the fourteenth century a cloth called "barchent," which like the English fustian consisted of a linen warp and cotton weft, was woven, and at that time found a widespread market. The early seats of the industry were Ulm and Augsburg, where the famous Fugger family rose to fame on the basis of barchent-weaving. Later the industry spread to other parts of Germany, to Alsace and to the towns along the northern trade-route. Before the end of the sixteenth century Nürnberg, Hof, Zwickau, Leipzig and Chemnitz were all engaged in cotton spinning and weaving, with the result that, at that time, Germany was far ahead of all other European countries in cotton manufacture. Before the end of the first quarter of the seventeenth century the country began to suffer one of the greatest devastations known to history through the outbreak of the Thirty Years' War, and its cotton manufacture almost disappeared.[1]

In addition, therefore, to the immigration of Flemings and to the destruction of industry in their country, it seems reasonable, particularly in view of the statement in the above petition that the manufacture in which cotton-wool was used had been gained from Hamburg, to look to the decay of the German industry as part of the explanation of the rise into prominence of the English fustian manufacture in the first half of the seventeenth century.

When Fuller came to write of Lancashire in 1662 it was the fustian manufacture that especially attracted his attention. After referring to the various kinds of foreign fustians (including Augsburg fustians) which had long been imported into the country, he states that "These retain their old names to this day, though these several sorts are made in this county, whose Inhabitants buying the cotton-wool or yarne, coming from beyond the sea, make it here into fustians, to the good employ-

[1] Dehn, *The German Cotton Industry* (1913), pp. 1-2.

ment of the Poor and great improvement of the Rich therein, serving many people for their outsides, and their betters for the Lineings of their garments. Bolton is the staple-place for this commodity, being brought thither from all parts of the county. As for Manchester, the Cottons thereof carry away the credit in our nation, and so they did an hundred and fifty years agoe. For when learned Leland on the cost of King Henry the Eighth, with his Guide, travailed Lancashire he called Manchester the fairest and quickest Town in this county and sure I am, it hath lost neither spruceness nor spirits since that time." He also mentions other products for which Manchester was noted to which reference will be made later.[1]

One point that should be noticed is that Fuller refers to Bolton as the centre of the fustian manufacture, while he mentions cottons, as a distinct fabric, especially in connection with Manchester. Though the manufacture of cotton had certainly made progress by this time, there is no substantial reason for thinking that the cottons referred to by him were different from the cottons of the sixteenth century. The fact is that the development of the cotton manufacture is definitely associated with the manufacture of fustians. In the middle of the eighteenth century, although other fabrics were then produced which had a stronger claim to be called cotton fabrics than had fustians, the words cotton manufacture still meant pre-eminently the manufacture of fustians.[2]

Further, the association of fustians in the seventeenth century with Bolton rather than with Manchester was probably justified. As we shall see, in its early stages the fustian manufacture was mainly, if not altogether, carried on in the outside districts. So far as Manchester was concerned, the manufacture of fustians appears, at first, to have been added to another branch of manufacture at a later date than when Fuller wrote. Before

[1] *Worthies of England* (1662), ii., pp. 106-107.
[2] *Infra*, pp. 25, 27, 29.

dealing with other branches of manufacture, however, it will be advisable to continue the history of the fustian manufacture into the thirties of the eighteenth century, which years mark an important stage in its development.

III

At the close of the seventeenth century, the annual import of cotton-wool amounted to nearly 2,000,000 lbs., and was still brought mainly from the Levant and the islands of the Mediterranean, though in the previous century some was imported from Africa.[1] In the seventeenth century, excellent witness is borne to the importance it had attained, by those interested in floating companies for colonisation putting forward prospects of its growth as an inducement to subscribers to their schemes.[2] Before the end of the century, cotton from the British plantations had assumed a prominent place, and from this time the European West Indian colonies, with South America, became the most important sources of supply until the end of the eighteenth century, when they in turn were displaced by the United States. Also, during these two centuries, cotton-yarn and fine cotton fabrics were imported by the East India Company from the ancient home of the cotton industry in the East.[3]

Apparently it was this import of fine cotton fabrics which in 1691 attracted the attention of John Barkstead, merchant, of London, and threatened to bring the developing cotton industry into the hands of a patentee. Mr. Barkstead was evidently an enterprising individual who was interested not only in the cotton industry, but also in the silk industry, and in copper mining.

We get the first glimpse of him in October, 1690, when he presented a petition, in which he pointed out that the workmanship of the fine thrown silk imported amounted to one quarter of its value, the benefits of which would

[1] Baines, *ibid.*, p. 346. Scott, *ibid.*, ii., p. 11.
[2] Scott, *ibid.*, pp. 323, 326, 335.
[3] *Records of Fort St George, Despatches from England*, 1670-1677, pp. 4, 27 *et seq.* Ure, *Cotton Manufacture*, i., p. 355, 1861 edition.

be enjoyed by the poor if it were performed at home. As he had found out an engine which would achieve the desired end, he requested the grant of a patent for fourteen years to enable him to introduce it. In the same month a warrant for the patent was issued, but there is no clear indication that the claim stated in the petition materialised.[1] In May, 1692, however, in a warrant issued to prepare a Bill for incorporating a company for winding silk, he appeared as the first governor[2]; and in July of the preceding year as an assistant in a company which had as its object the purchase of lands where copper was expected to be found.[3]

It was in this month that he presented a petition, in which he claimed that, by his industry and at great expense, he had "procured cotton wool from the West Indies, to be spun so extraordinarily fine, as to be fit to make such cloths commonly called callicoes . . . as well as in the East Indies," and prayed for a patent for his invention.[4] A few days later a warrant was issued to prepare a Bill to grant this prayer.[5] Whether in the meantime his idea had developed, or he had evolved a new one, it is difficult to say, but in the following month his name as petitioner again appeared, this time in connection with an invention for "making calicoes, muslins, and other fine cloths of that sort (out of the cotton wool of the growth and produce of the Plantations in the West Indies) to as great perfection as those which are brought over and imported hither from Calicut and other places in the East Indies."[6] Again a warrant was issued to prepare a Bill for the grant of a patent which he evidently secured.[7]

[1] *S.P.D.*, Petition Entry Book, i., p. 96. *S.P.D.*, Warrant Book, xxxv., p. 434.
[2] *Ibid.*, H.O. Warrant Book, vi., p. 335.
[3] *Ibid.*, p. 115.
[4] *Ibid.*, Petition Entry Book, i., p. 154.
[5] *Ibid.*, H.O. Warrant Book, vi., p. 125.
[6] *Ibid.*, Petition Entry Book, i., p. 178.
[7] *Ibid.*, H.O. Warrant Book, vi., p. 164. For a reference to this patent see French, *Life and Times of Samuel Crompton* (1859), pp. 233-234.

The next step was the customary one of applying for a charter of incorporation in order to exploit the invention. Consequently two months later (October, 1691) we find Mr. Barkstead and five other London merchants, including one of the assistants in the silk-winding company, pointing out that the "said Barkstead has found out an invention for making calicoes and muslins, etc., out of Cotton wool for which he has a patent for 14 years, but that the undertaking requiring at least £100,000 stock to carry on and manage the said invention, the petitioners humbly pray to be incorporated with the Earl of Nottingham as their first governor." The petition was referred to the Attorney or Solicitor-General, but fortunately the scheme does not appear to have come to anything.[1]

As a matter of fact, although this incident is interesting, like the majority of schemes of a similar character relating to other industries, it cannot be regarded as of any importance in the development of the cotton industry in this country. The idea of supplanting the fine cotton fabrics of the East by home productions was, no doubt, an attractive one—doubly so because in 1691 the existing East India Company was being vigorously opposed by a rival syndicate. In the same month as the above charter was applied for, a petition was presented to the House of Commons, in the name of the London merchants, attacking the existing company, and less than five months later an address was presented to the King praying that he would dissolve it and incorporate a new one.[2] It may well have been that Mr. Barkstead's

[1] *S.P.D.*, Petition Entry Book, i., p. 198. It is apparent that it was much the same set of men who were interested in all Barkstead's schemes. Another assistant in the silk-winding company appeared with Barkstead as assistant in the copper mines company. I have been unable to find any trace of the cotton company, and Professor W. R. Scott informs me that he does not think the company was actually floated even if a charter was granted. By those acquainted with the exhaustive character of Professor Scott's work his statement will be regarded as conclusive.

[2] Scott, *ibid.*, ii., p. 152.

scheme was a part of, or at any rate a symptom of, the opposition then prevailing, and had very little substantial foundation. His application for a patent stands altogether on a different footing from those of the next century, when the machinery to which they referred did actually attain the end which he claimed to have in view. In the seventeenth century this was impossible: at that time, it is questionable whether any fabrics consisting entirely of cotton were produced in the country at all. In any case it is certain that the chief products of the English cotton manufacture were the hybrid fustians consisting of a linen warp and cotton weft.

After the collapse of Mr. Barkstead's scheme the English cotton industry does not appear to have had much attraction for men with grandiose aims, until the South Sea period arrived, when two companies were proposed, each with a capital of £2,000,000, one "for making calico in Great Britain and encouraging the growth of cotton in the plantations," and the other "for the cotton manufacture in Lancashire," while there was also "A proposal by several ladies and others to make, print and paint and stain callicoes in England and also fine linen as fine as any Holland to be made of British flax." Subscribers to the latter scheme had to be women dressed in calico.[1] How this scheme fits into its historical environment will at once become apparent.

Before the end of the seventeenth century the import of fabrics from the East had created considerable agitation among those engaged in the silk and woollen trades, and demands were made for legislative interference. In 1700 an Act was passed,[2] by which the import of printed or dyed calicoes was prohibited, and their sale or use either for apparel or furniture made subject to a penalty. The prohibition was speedily followed by an import of plain calicoes which were printed or dyed in this country, and as early as 1703, petitions for further

[1] Scott, *S.P.D.*, Petition Entry Book, iii., pp. 450-452.
[2] 11 and 12 Wm. III., c. 10.

restrictions were again being presented to Parliament.[1] For some years little notice was taken of them, but from 1719 the petitions became a flood,[2] with the result that, in 1721, another Act[3] was passed which prohibited the use or wear of printed or dyed calicoes, whether the printing or dyeing had been performed in England or elsewhere.

It has been stated that one of the reasons for the failure of the Act of 1700 was that "Lancashire men set to work to produce cloth of linen warp and cotton weft which was sent to London to be printed and dyed in imitation of the prohibited Oriental fabrics."[4] It appears, however, that there is little or no justification for this view. At a time when petitions to Parliament were regarded almost as a positive obligation on the part of anyone who had a real or imaginary grievance, it is exceedingly improbable, had such been the case, that the Lancashire men would have failed to make their voices heard. Apparently, not a single petition was presented from the county in opposition to the proposed legislation by those engaged in making cloth of the character mentioned, while there was at least one in favour of it.[5] Moreover, it is significant that no mention of such a cloth is to be found in the petitions praying for restriction. The opposition to the Bill came mainly from the towns of Scotland engaged in the linen industry, where it was feared that linens would be included, and this opposition was successful, as British linens were specifically excluded from the Act.[6]

Singularly enough, the opposition on behalf of a cotton manufacture came, not from Lancashire, but from Dorset in the following petition, which is of sufficient interest in the early history of the English cotton industry to be quoted in full:

A "Petition of the Mayor, Aldermen, Bailiffs, Capital

[1] *Journals of the House of Commons*, xiv., pp. 280, 283, 284.
[2] *Ibid.*, xix., p. 182 *et seq.*
[3] 7 Geo. I., c. 7.
[4] Espinasse, *Lancashire Worthies* (1874), pp. 297-298.
[5] *J.H.C.*, xix. 208. [6] *Ibid.*

Burgesses and principal inhabitants of the Borough of Weymouth and Melcomb Regis in the County of Dorset, together with the Merchants, Masters of Ships, Master workmen, Weavers and Spinners of Cotton Wool imported from the British Plantations and manufactured in the town aforesaid, in behalf of themselves and many hundred of poor Cotton spinners in that neighbourhood was presented to the House and read, setting forth, that for many years past a manufacture had been carried on in the said town for making Cotton Wool imported from the British Planations into cloth of divers kinds, more particularly into such fabrics as imitate calicoes ; which having, of late years, been printed and dyed, have afforded the manufacturers opportunity to support the Poor in that town and neighbourhood thereof. That the petitioners are apprehensive that the manufacture of cotton cloth in that town may, under the name of calicoes, be interdicted the weaving, by which means many hundred families of poor cotton spinners will be reduced to want, and the Manufacture of that town entirely lost : and praying that the Cotton cloth manufactured in that town, both checqued, printed, and dyed, may be permitted to be worn in the same manner and liable to the same duties as the Manufacture of British and Irish Linens are permitted." [1]

The apprehension of the petitioners was justified, as a motion to refer their petition to the Committee of the whole House, then concerned with the Bill for more stringent restrictions on the use and wear of printed or dyed calicoes, was passed in the negative by 190 votes to 68.[2] In the Act of 1721 the prohibition included any printed stuff made of cotton or mixed therewith, but from its scope muslins, neckcloths, and fustians were excluded.[3]

The above petition is distinctly interesting, not only as evidence that cotton was manufactured in Dorset, but also in that there is no suggestion that the cloths were not composed solely of cotton, and this at a time

[1] *J.H.C.*, xix. 295. [2] *Ibid.* [3] *Ibid*, xxii. 566.

when it is improbable that such cloths were manufactured to any extent in Lancashire.

The fustian manufacture had been in existence in the country for more than a century, and, by 1720, must have been of considerable importance, but apparently a stage had not been reached when printed fustians were seriously competitive with other kinds of printed cloth.

The prohibition of the use of printed calicoes had its effect, however, in stimulating the printing of other fabrics,[1] and after the passing of the Act of 1721 it is clear that printed fustians began to occupy a prominent place in the cloth trade of the country, which again called

[1] "I proceed to another visible increase of trade, which spreads daily among us, and affects not England only, but Scotland and Ireland also, though the consumption depends wholly upon England, and that is, the printing or painting of linen. The late Acts prohibiting the use and weaving of painted callicoes either in clothes, equipages, or house furniture, were without question aimed at improving the consumption of our woollen manufacture, and in part it had an effect that way. But the humour of the people running another way, and being used to and pleased with the light, easie, and gay dress of the callicoes, the callicoe printers fell to work to imitate those callicoes by making the same stamps and impressions, and with the same beauty of colours, upon linen, and thus they fell upon the two branches of linen called Scots cloth and Irish linen. So that this is an article wholly new in trade, and indeed the printing itself is wholly new; for it is but a few years ago since no such thing as painting or printing of linen or callicoe was known in England; all being supplied so cheap and performed so very fine in India, that nothing but a prohibition of the foreign printed callicoes could raise it up to a manufacture at home; whereas now it is so increased, that the parliament has thought it of magnitude sufficient to levy a tax upon it, and a considerable revenue is raised by it" (*A Plan of the English Commerce* (1728), p. 296, quoted in Baines' *Cotton Manufacture*, pp. 260-261). A good brief account of the early development of calico printing in this country is given in two lectures by Edmund Potter, of Manchester, vol. iii., *The Monthly Literary and Scientific Lecturer*, 1852. The trade began in the neighbourhood of London in the last years of the seventeenth century and was first established in Lancashire in 1764. Shortly afterwards the first Robert Peel became interested in it and carried it on with great vigour. "Peel was to calico printing what Arkwright was to spinning." See also *Report of Committee on Manufactures, Commerce, and Shipping* (1833), p. 237.

forth opposition from those engaged in the woollen trades which came to a head in 1735.

This time the opposition, which centred in Norwich, took the form of instituting prosecutions under the 1721 Act, of inserting notices in newspapers and distributing them, informing the public that the wearing or using of printed fustians was illegal. As printed fustians had been excluded from the scope of the Act, there was no illegality, but the opposition was sufficient to call forth a petition from the fustian manufacturers in Manchester and other parts of Lancashire, and in the counties of Cheshire and Derbyshire, appealing for the Act to be explained so that the question would be placed beyond doubt.[1] In the evidence on the petition [2] a strong case was presented on behalf of merchants engaged in foreign trade—particularly in the import of cotton—and of fustian manufacturers, it being stated that several thousand persons from five to seventy years of age were employed in the manufacture. One witness asserted that he and his brother employed upwards of 600 looms in the weaving of fustians, and as one weaver required four spinners to supply him with yarn, he computed that upwards of 3000 persons were dependent upon them for employment—a striking case of large-scale production, in the sense of numbers employed, nearly forty years before the appearance of the factory in the cotton industry.

In little over a month after the petition was presented the "Manchester Act" [3] was passed, which explained the 1721 Act, so as definitely to exclude from its scope printed goods made of linen yarn and cotton-wool, manufactured in Great Britain. It will be noticed that even this Act did not remove the prohibition on the use of printed goods made entirely of cotton. The justification given in the Act for allowing the use of printed goods, when made of linen-yarn and cotton-wool, was that they were "a branch of the ancient fustian manufacture of this

[1] *J.H.C.*, xxii., p. 551. [2] *Ibid.*, pp. 566-567.
[3] 9 Geo. II., c. 4.

kingdom." So far as petitions were concerned, the only opposition to the "Manchester Act" came from the Company of Weavers in London, on the ground that fustians could only with great difficulty be distinguished from Indian calicoes, and that the use of the latter would be made easy; and from the Gentlemen, Landowners, Occupiers of Land, Wool-staplers, Wool-combers, and Weavers of the City of Peterborough, who desired the Bill which preceded the Act to be explained for the general good of the wool and silk manufactures.[1] On the other hand, the traders of Wakefield supported the Bill with the argument that a restriction on the import of cotton-wool, which the prohibition of printed fustians would involve, would prejudice their export of woollens, and the woollen manufacturers of Burnley adopted a similar attitude; also, the Bill was wholeheartedly supported by the merchants engaged in foreign trade at Glasgow, Whitehaven and Lancaster.[2]

From the thirties of the eighteenth century until the coming of the great inventions the cotton industry made slow but steady progress. The import of cotton-wool which in 1730 amounted to 1,545,472 lbs. reached 3,870,392 lbs. in 1764, but it was not until the eighties that a startling increase was seen; the average import in the last two years of that decade amounted to 32,000,000 lbs.[3] At that time the organisation of the industry, the methods of manufacture, and the character of its products, were undergoing the changes which mark the early stages of the industry in its present form.

IV

In considering the development which took place from the middle of the seventeenth century to the last quarter of the eighteenth as regards other textile com-

[1] *J.H.C.*, xxii., pp. 589, 605. The weavers claimed to be manufacturers of worsted stuffs and stuffs made of silk and cotton.

[2] *Ibid.*, xxii., pp. 593-595.

[3] Baines, *History of the Cotton Manufacture*, pp. 346-347.

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MANCHESTER IN THE SEVENTEENTH AND EARLY EIGHTEENTH CENTURIES

modities produced in the Manchester district, a useful starting-point is given by a writer about 1650, who described the trade of the town as "not inferior to that of many cities in the kingdom, chiefly consisting in woollen frizes, fustians, sack-cloths, mingled stuffs, caps, inkles, tapes, points, etc., whereby not only the better sort of men are employed, but also the very children by their own labour can maintain themselves." [1]

The enumeration of commodities in this account, which is very similar to that given by Fuller in 1662, may be compared with another contained in an account of Manchester and its trade in 1751, which may be regarded as holding good in the main for a considerable time later: "Ye present Inhabitants . . . are in particular known to be an Industrious people; the Reason of their being so numerous is y^e^ flourishing trade follow'd here for a long time known by y^e^ name of Manchester Trade w^ch^ not only makes y^e^ town but y^e^ Country round about for several miles populous, industrious & wealthy. The trade consists chiefly of three general branches, viz. The Fustian or Cotton Manufacturs, y^e^ Check Trade & Small Wares. The Fustian Manufacture call'd Manchester Cottons, has been long in y^e^ place & neighbourhood, & is of late much improv'd by several modern Inventions in dying and printing. The Check Trade includes several Articles, as Stuffs for Aprons, Gowns, Shirts, Ticking, Bolstering, &c. But y^e^ Small Ware Business comprehends most as Inckle, Lace of many sorts, Tapes, Filleting, &c. All

[1] Quoted from Aikin's *A Description of the Country from Thirty to Forty Miles round Manchester* (1795), p. 154. The description originally appeared with "A Plan of Manchester and Salford taken about 1650." This plan was inserted in the sheet of another "Plan of the towns of Manchester and Salford," first published in 1741, and republished with small alterations in 1746 and 1751. The 1751 plan has been reissued with Procter's *Memorials of Bygone Manchester* (1880). These plans are important for our purpose as the letterpress accompanying them contains a description of Manchester and Salford from which the second quotation in the text is taken. The whole of the letterpress is given by Procter, *ibid.*, pp. 350-356.

these Trades employ both a great number & almost all sorts of Hands not only of Men both Rich & Poor but of Women & Children, even of 5 or 6 years old, who by Spinning, Winding, or Weaving, may earn more here than in any other part of y^e^ Kingdom. . . . There is not any Town in y^e^ nation excepting our Sea Ports y^t^ may be compared to it in Trade as appears from y^e^ number of Packs of Goods w^ch^ go weekly out of y^e^ Town, w^ch^ amount in a moderate Computation to 500."

It will be noticed that a distinction is made between three general branches of trade, a distinction which an analysis of the first Manchester Directory, compiled twenty years later, shows to have had a sound basis.[1] At this point, however, we are concerned with the development which had taken place during the century which intervened between the two quotations, a development which can be traced in Ogden's *Description of Manchester*, published in 1783.[2] Unfortunately he gives no definite dates as to the changes to which he refers, but the development of the three general branches of trade carried on in the town is fairly clearly indicated.

In addition to the manufacture of such commodities as those mentioned in the 1651 reference, he informs us that bolsters, bed-ticks, linen-girth web, and bootstraps were among the early manufactures, but that the trade in ticks and webs was soon lost to the West of England. This led to those concerned in making them turning to the manufacture of coarse checks, striped hollands, hooping and canvas.[3] As time went on "the

[1] See tables *infra*, pp. 67-68. In 1603, and in 1613, the Town Jury of Manchester dealt with complaints of the keeping of a Friday market in the open street for the sale of "Sackclothe, Incle-points, Garteringe, Threede, Buttons, and other Smallwares" to the prejudice of the Saturday market (*Manchester Court Leet Records*, vol. ii., pp. 189, 287).

[2] Republished in 1887 under the title of *Manchester a Hundred Years Ago*, and edited with an introduction by William E. A. Axon. A comparison of the portion of Aikin's *Manchester* dealing with the trade of the town will show that this is the "printed account" from which his information was obtained. The references in the above text are to the 1887 reprint.

[3] Ogden, *ibid.*, p. 73.

manufacturers of check made great advances in trade and introduced new articles." What they appear to have done was to progress in the direction of making goods consisting entirely of cotton and mainly of cotton.[1]

But there was another line of development pursued by those engaged in the manufacture of laces, inkles, tapes, and filleting. At an early stage these men added "divers kinds of bindings and worsted smallwares,"[2] and later when "it was found that the Dutch enjoyed the manufacture of fine Holland tapes unrivalled: plans were therefore procured, and ingenious mechanics invited over to construct swivel engines, at great expense, but adapted to light work for which they were first intended, on so true a principle, that they have been employed in most branches of small-wares with success."[3]

As regards the fustian manufacture, Ogden implies that, at first, it was not carried on in Manchester to any extent, and in this respect his statement is supported by that of Fuller in 1662. Referring to an early date, Ogden states that "Fustians were made about Bolton, Leigh, and the places adjacent, but Bolton was the principal market for them, where they were bought in the grey by Manchester chapmen, who finished and sold them in the country."[4] When we get to 1772, however, it is evident that there were a large number of fustian manufacturers in the town,[5] and in the petition which resulted in the 1736 "Manchester Act" "manufacturers of fustians in the town of Manchester" were certainly prominent. Ogden's account of the matter is that the smallware "manufactory has not been sufficient to employ large capitals without the aid of some other branch. The fustian trade has been added to it, first as an auxiliary, and then embraced as a principal, where there was capital to support it."[6]

Probably the development which took place was, that as fustians came to be printed, and their manu-

[1] Ogden, *ibid.*, p. 78-79. [2] *Ibid.*, p. 81. [3] *Ibid.*, p. 82.
[4] *Ibid.*, p. 74. [5] *Infra*, p. 67. [6] Ogden, *ibid.*, p. 82.

facture extended, some smallware manufacturers turned part of their capital into that trade, and later adopted it altogether, while others no doubt began in business as manufacturers of fustians. Thus by the middle of the eighteenth century, and particularly by 1772, the three branches of trade in Manchester could be fairly clearly distinguished from one another, although at that date some manufacturers were engaged in more than one of the three trades.[1]

The term fustian, it may be noticed, comprehended a large range of goods of which herring-bones, pillows for pockets and outside wear, strong cotton ribs and baragons, broad-raced linen thicksets and tufts, dyed, with white diapers, striped dimities, and lining jeans, are mentioned by Ogden.[2] Cotton thicksets and cotton velvets were also attempted, but in neither of these was much success attained until the later years of the eighteenth century owing to lack of better methods of dressing, bleaching, dyeing and finishing.[3] If thread [4] and sail-cloth [5] are added to the commodities which have been mentioned, also woollens, which were mainly produced in the districts directly north and north-east of Manchester, probably the principal textile goods manufactured in Lancashire until the seventies of the eighteenth century have been included in the list.

[1] *Infra*, p. 67. [2] Ogden, *ibid.*, p. 75. [3] *Ibid.*, pp. 75, 77.

[4] *J.H.C.*, pp. 76-78, 1737. In his evidence on a petition relating to linens, threads, tapes, etc., John Marriot, thread-maker, Manchester, stated that the thread manufacture in Lancashire had more than doubled during the preceding twenty-four years.

[5] Warrington was especially noted for this manufacture. In March, 1749 (*J.H.C.*), it was stated in evidence from Warrington that 5000 people were thus employed. In the evidence given on this occasion instances were mentioned of one manufacturer at Reading having 500 families, comprehending 2000 persons, on his books as employees. Another at Deptford had 46 looms employed and 500 poor families. See also *J.H.C.*, xxvi., p. 781, 1754. Three principal hosiers at Nottingham had 100 frames each. For evidence as to manufacture of sail-cloth at Warrington, see also Aikin, *Manchester*, p. 302; Pococke, *Travels Through England*, i., p. 9.

At the present day, it is difficult to discover the exact materials of which some of the goods mentioned were made, but as the smallware weavers were always known as worsted smallware weavers, it may be assumed that worsted entered largely into their products. With checks, and fustians, linen was a more prominent material, but into these cotton certainly entered, as it probably did into the majority of goods to some extent, and silk was also utilised.[1] Frequently it has been stated [2] that no goods were made entirely of cotton in England until Arkwright began to spin by rollers, but the statement is inaccurate. Maybe they were not produced to a large extent compared with mixed goods, but that they were made in the Manchester district before that time is distinctly stated by Ogden.[3] What is certain is that linen was largely manufactured. In a petition presented to the House of Commons in 1713 it was stated that in Lancashire 60,000 persons were engaged in its manufacture,[4] and this and other petitions show that they were situated in almost every part of the county.[5]

[1] Ogden, *ibid.*, p. 74.

[2] By Ure and Espinasse definitely, by Baines more cautiously. Ure, *Cotton Manufacture*, i., p. 223. Espinasse, *Lancashire Worthies*, p. 415. Baines, *ibid.*, pp. 101, 322.

[3] Ogden, *ibid.*, pp. 78-79. After referring to various goods produced in Manchester, certainly before 1770, he proceeds: "To these succeeded washing hollands all cotton in the warp which were a good article with the housewives, till yarn was mixed with the warp and ruined their character." He also refers to the manufacture of cotton goods for the African trade. The statements of the other writers are, of course, based upon the fact that it was difficult to spin a cotton thread suitable for warp with the existing appliances. Even so, cotton goods were made in other countries, and cotton yarn was imported. As regards the use of the word "yarn" in the eighteenth century in England, it was not often used with reference to cotton, but usually to linen yarn. *Cf.* Ogden, *ibid.*, p. 92: "If cotton comes down to a reasonable price, the warps made of this twist would be as cheap as those made of yarn, and keep the money here which was sent abroad for that article, there being no comparison between yarn and cotton warps for goodness."

[4] *J.H.C.*, xvii., p. 377.

[5] *Ibid.*, xvi., pp. 311-324, 509-511.

CHAPTER II

THE ORGANISATION OF THE COTTON MANUFACTURE

I

"ONE writeth that about Anno 1520 there were three famous clothiers living in the North Countrey viz. Cuthbert of Kendal, Hodgkins of Halifax, and Martin Brian, some say Byrom of Manchester. Every one of these kept a greate number of servants at worke, Spinners, Carders, Fullers, Dyers, Sheareman, &c., to the greate admiration of all that came to beehould them." [1] This reference, and another in a statute of 1543, contain all the information we possess of the organisation of the Lancashire cloth industry, either on its industrial or commercial side, in the first half of the sixteenth century. From the reference in the statute, it appears that Manchester, in the middle of the sixteenth century, was not particularly noted for its wealth, though it was noted for the "good order strayte and true dealing of the inhabitantes." Consequently "many strangers, as wel of Ireland as of other places within this realme, haue resorted to the saide towne with lynnen yarne, woolles, and other necessary wares for makinge of clothes, to be sold there, and haue

[1] Hollingworth, *Mancuniensis*, Willis's Edition (1839), p. 28. In the introduction to this edition the following facts are given of the author:— Richard Hollingworth was a Fellow of Christ College, Manchester, and died on 11th November 1656, in Manchester, after being imprisoned and deprived of the income arising from his fellowship in consequence of the breaking up of the collegiate body by Colonel Thomas Birch of Birch Hall, near Manchester, acting under the command of the Committee of Sequestration. In the Chetham Library there are two manuscript copies, and in both the date is given as 1120, but in one it is corrected "a mistake for 1520 about 12 H. 8," a correction which is obviously justified.

used to credit & truste the poor inhabitantes of the same towne, which were not able and had not redy money to paye in hande for the saide yarnes woolles and wares vnto such time the saide credites with their industry labour and peynes myght make clothes of the said wolles yarns and other necessary wares, and solde the same, to contente and paye their creditours, wherein hath consisted much of the common wealth of the saide towne, and many poore folkes had lyunge, and children and seruants there vertuously brought up in honest and true labour, out of all ydlenes." [1]

In 1577 some clothiers of Lancashire presented a petition praying that a statute passed in the reign of Edward VI.,[2] which imposed restrictions on middlemen buying and selling wool, should not be enforced. Under the terms of the statute, wool-growers were only allowed to sell their product either to a merchant of the staple or to persons actually engaged in its manufacture. This arrangement was unsuitable to the petitioners as they were "poore cotegers whose habylitye wyll not stretche neyther to buye any substance of woolles to mayntayne worke and labor, nor yet to fetche the same (the growyth of wolles being foure or fyve score myles at the leaste distant)" and they feared that if the statute were enforced "the trade will be driven into a fewe riche men's hands, so that the poore shall not be paid for their worke, but as it pleaseth the riche." [3]

Judging from this reference, it would appear that the conditions described as existing in Manchester more than thirty years before were still typical of Lancashire. Possibly this may have been the case in some parts of the county, but it is clear that, in the last quarter of the sixteenth century, and in the early years of the next century, there were many men of means resident in the Manchester district engaged in the cloth industry.

[1] 33 Henry VIII., c. xv., quoted by Baines, *ibid.*, pp. 92-93.
[2] 5 and 6 Edward VI., c. 7.
[3] *S.P.D. Eliz.*, vol. cxvii. 38, quoted *Economic Journal*, x., p. 23.

Especially prominent at this time were the Tippings, the Mosleys and the Chethams, and there were also others.[1] These men were variously described as clothiers, linen drapers, chapmen, silk weavers, mercers and glovers.[2] In 1607 Anthony Mosley of Manchester, clothier, third son of Edward Mosley, Gentleman, and younger son of Sir Nicholas Mosley, Lord of the Manor of Manchester, left a considerable fortune, and out of it bequeathed £500 for the building of an almshouse in the town, and for the purchasing of lands to belong to it, for the maintenance of the aged and the impotent, on condition that £1500 more were raised within a year.[3] At least two of this man's sons became clothiers, one of them who died in 1628 leaving £5 to be distributed to the poor of Manchester at his funeral.[4] The bequeathing of money for charitable purposes was a frequent occurrence with the men

[1] In 1578 the will of James Rillston, of Manchester, "cotton man," was proved at Chester. Evidently he was in partnership with his cousin, who resided in London, to whom he used to send "packs" of cottons, worth £11, 11s. each. He owned "houses, shoppes, chambers, and warehouses" in Deansgate. One of his sons became a citizen and grocer of London, and married the eldest daughter of Richard Tipping, Linen Draper of Manchester. In the will of Edward Hanson, mercer and grocer of Manchester (1584), the statement appears that "Wm Napton, Wm Woodcocke, and Thos Sawell citizens and grocers of London oweth me for six packs of cottons at 10l. xvs. a pack the sum of 64l. 10s." Mr. Hanson was Boroughreeve of Manchester in 1569 (*Manchester Court Leet Records*, vol. i., pp. 203-204, 245).

[2] *Lancashire and Cheshire Wills*, Chetham Society, New Series, vol. iii.

[3] *Lancashire and Cheshire Wills, ibid.*, N.S., vol. xxviii., pp. 15 *et seq.* If the sum mentioned were not raised the £500 had to be put out at eight per cent. interest for ten years, and of the annual £40 thus raised, £5 had to be used for repairing the Parish church of Manchester, £5 to be devoted to the support of poor scholars of the free schools in Manchester, Middleton or Rochdale going to either university, £10 to the maintenance of bridges and highways in the Parish of Manchester, £10 to fuel and apparel for the poor of Manchester and Salford, £5 to the poor of Rochdale, and £5 to poor folks next of kin to the testator and to his wife. At the end of the ten years the £500 had to go to his children.

[4] *Ibid.*, p. 35.

engaged in the cloth industry in Manchester at this time. In 1621 William Mosier, chapman, left £10 to the churchwardens in trust for the use, maintenance and relief of the aged and impotent poor in the town,[1] and these benefactions reached their culmination in the monumental bequest of Humphrey Chetham, founder of Chetham's Hospital and Library.

Some idea of the extent to which Anthony Mosley was engaged in the cloth trade may be gathered from the facts that at home he had cloth to the value of £247, and abroad (evidently in the hands of traders and finishers) to the value of £224.[2] He had debts owing to him to the extent of nearly £1300, of which sum £850 had been put into stock "with Francis Locker by indentures." To what extent the other portion was owing for cloth is not clear, but the fact that a debt was owing by a mercer suggests that some of it was.

It is in connection with the Chethams, however, and particularly with Humphrey Chetham, whose life covered

[1] *Lancashire and Cheshire Wills, ibid.*, p. 24.
[2] *Ibid.*, p. 15 *et seq.*

CLOTH AT HOME AND ABROAD

	£	s.	d.		£	s.	d.
70 pieces of broad Whites ready dressed at 45s. a piece	157	10	0	At Robt. Bowker's: 46 broad Whites at 46s. 8d. a piece	107	6	8
38 Graies at 30s. a piece	57	0	0	34 Graies at 30s. a piece	51	0	0
13 Cottons at 32s. a piece	20	16	0	At Roger Nayden's Mylne: 30 Graies at 30s. a piece	45	0	0
1 Black Cotton	1	10	0	At Wm. Wardleworth's Mylne: 6 Cottons and one Graie	10	10	0
12 pieces Rett (?) canvas	10	10	0	At Jno. Heywood's Mylne: 7 Graies at 30s. a piece	10	10	0
	£247	6	0		£224	6	8

the period from 1580 to 1653,[1] that we get the most valuable information concerning the organisation of the cloth industry in the Manchester district in the seventeenth century. Besides Humphrey, three of his brothers were engaged in "Manchester trade." [2] In 1597 he was apprenticed to Mr. Samuel Tipping, a Manchester linendraper, to whom his eldest brother, James, was also apprenticed, while another brother, George, was apprenticed to Mr. George Tipping, the younger brother of Samuel, who again was a "grosser and linen draper." [3] About 1605 George and Humphrey Chetham entered into a partnership which was renewed and continued until the death of the former at the end of 1626, though after 1619, rather than to extend their mercantile business, they invested their capital in land.[4]

Their concern consisted of two branches, one in Manchester and the other in London, where George was a citizen and a member of the Merchant Taylors' Company.[5] In 1619, when a new deed of partnership was drawn up, Humphrey was described as a "chapman" and his brother as a "grocer," and their business was said to consist "in the trade of buying and selling fustians and other wares and merchandises." George had to manage "the factory and business of the joint-trade in and about the city of London," and Humphrey had to do the same in and about Manchester, and in any other parts of England. At this time they had a joint stock of about £10,000.[6]

When Fuller wrote his account of Humphrey Chetham he stated that three brothers of the family were engaged in the Manchester trade, and that they dealt chiefly in fustians purchased in the Bolton market, which they

[1] Raines and Sutton, *Life of Humphrey Chetham*, Chetham Society, N.S., vol. xlix.

[2] *Ibid.*, pp. 8-11. [3] *Ibid.*, p. 11. [4] *Ibid.*, pp. 12, 21-22.

[5] *Ibid.*, p. 7. This system of having a branch in Manchester and one in London was apparently customary at the time. It seems to have obtained in the case of William Mosier, mentioned above. *Cf. ante*, p. 32, note.

[6] *Ibid.*, pp. 14-15.

sent to London, and from this account it has been generally deduced that they were simply dealers in fustians. With the publication of an authentic life of Humphrey Chetham it has become apparent that he was more than this. In the Manchester district he bought "friezes, fustians, coattons, and haberdasherye," which he not only sent in large quantities to the London market, but sold them by retail in Manchester. He was a general merchant who purchased a large variety of goods in all parts of the Manchester district. In addition he was a "manufacturer" employing people over an extensive area in spinning yarn, and in weaving and finishing cloth, and other members of the family were similarly engaged.[1]

In 1626 his accounts reveal several significant facts[2]:

Money lent in various sums (the highest being £200 and the lowest £1, 10s. .	£785	9	4
To Wool sold to a great many persons (the regular price being £21 for 1 pack of Cypress wool 12xx (score weight)) .	124	18	8
For Irish yeorne (yarn) . . .	89	13	4
For (dossen) dozen yeorne . . .	1	14	6
Wooll sould by retale . . .	18	8	0
Ditto . . .	210	13	0
In all .	£1230	16	10

From these accounts it is evident that Chetham dealt in cotton (Cypress wool) and also in linen yarn (Irish yarn), the two principal materials for the manufacture of fustians. The next fact has reference to the economic relationships which existed between him and those who worked the materials. A popular view is that in Lancashire up to the coming of the factory, in the latter years of the eighteenth century, the majority of the

[1] Raines and Sutton, *Life of Humphrey Chetham*, pp. 8-15, 123-124. Chetham employed people in Manchester, Ashton, Hollinwood, Eccles and other places.

[2] *Ibid.*, p. 30.

workpeople were more or less independent producers who usually bought their materials, and after working them into cloth sold it to traders such as Chetham. That this was not generally the case in the first half of the eighteenth century is certain, and that it obtained as a general rule in the previous century is seriously open to question. As already mentioned, Chetham employed spinners and weavers, and the above accounts suggest that when he sold cotton and yarn, much of it was sold in small quantities, and also that it was sold on credit. This means that Chetham, if he did not employ the buyers in the ordinary sense, financed them to the extent of the cost of their raw materials, and if so to this extent they were economically dependent upon him, as they probably were for the disposal of the product. The probability is that, in his day, Chetham's position in the economic organisation was little different, if any, from that of the typical capitalist "clothier" of the domestic system who gave out work to workpeople, and paid them for their labour when its product was returned to him.[1]

This does not necessarily mean that, at this time, there were no small semi-independent producers in the rising cotton industry. Probably there were, and for a long time afterwards, but it is extremely doubtful whether they should be regarded as the typical workpeople. Rather, the evidence points to the contrary. In 1702 a petition was presented from the West Country clothing district complaining of the master weavers paying their workpeople in truck, instead of in money, and the allegations of the petition were found to be true,[2] with the result that a Bill was ordered to deal with the matter, which in the same year became an Act.[3] In the Act provision was made to restrain workpeople from embezzling materials delivered to them by clothiers and others, and within the scope of the Act those

[1] *Cf.* Unwin, *Industrial Organisation in the XVIth and XVIIth Centuries*, pp. 235-236, where a classification of clothiers is given from a State document, 1615.

[2] *J.H.C.*, xiv., p. 67.

[3] 1 Anne, c. 18.

engaged in the cotton and fustian manufactures were included. At first the Act was a temporary measure, and referred only to the woollen, fustian, cotton, and iron manufactures of the kingdom. In 1710 it was made perpetual,[1] and in 1740 the leather manufacture was included.[2] In 1749 the scope of the Act was extended to the fur, hemp, flax, mohair and silk manufactures, and a provision was inserted for preventing unlawful combinations of all persons employed in all the trades mentioned.[3] None of the petitions presented from Lancashire in the first part of the eighteenth century gives the slightest reason for thinking that the system of organisation implied in the provisions of the 1702 Act did not generally obtain in the county during the first half of the eighteenth century. In the check and smallware branches of Manchester trade it certainly did, and it is extremely probable that long before 1770 the same can be said of the fustian branch.

In considering the position in this branch, it must be borne in mind that, at first, it was probably not carried on in and immediately about Manchester to the same extent as the other two. Taking Ogden as our authority he speaks of Manchester chapmen going to Bolton and other markets to buy fustian pieces from the weavers, "every weaver then procuring yarn or cotton as they could" as the original system.[4] When this original system was general he does not state, but the general impression he gives is that it was not later than the early years of the eighteenth century. In any case, the system was not sufficient to meet the demands of the traders, and "To remedy this inconvenience, some of them furnished warps and wool to the weavers

[1] 9 Anne, c. 32. [2] 13 Geo. II., c. 8.

[3] 22 Geo. II., c. 27. Professor Ashley has drawn attention to the significance of these Acts (*Economic Organisation of England* (1914), p. 145). *Cf. J.H.C.*, xvi., p. 311, 1709: "Petition of divers principal traders and dealers in linen manufactures on behalf of themselves and several thousand workmen employed by them in the said trade in Manchester and adjacent parts."

[4] Ogden, *ibid.*, pp. 74-88.

and employed persons to put warps out to weaving by commission; and encouraged many weavers to fetch them from Manchester, endeavouring to secure the honesty and care of their workmen, upon bringing in the piece, by the force of good usage and prompt payment; but reserving to themselves a power of abatement, for deficiency in the spinning and workmanship." [1]

The next quotation carries us to the sixties, when the jenny was introduced for spinning. "From the time that the original system was changed in the fustian branch, of buying pieces in the grey from the weavers, by delivering them out work, the custom of giving them out weft in the cops, which obtained for a while grew into disuse, as there was no detecting the knavery of spinners till a piece came in woven; so that the practice was changed, and wool given with warps, the weaver answering for the spinning; and the weavers, in a scarcity of spinning, have been paid less for the weft than they gave the spinner, but durst not complain, much less abate the spinner lest their looms should stand unemployed: but when jennies were introduced, and children could work on them, the case was altered, and many who had been insolent before, were glad to be employed in carding and slubbing for these engines." [2] It will be noticed that the change mentioned in this quotation did not mean a reversion to the original system—the giving out of work continued—but the weaver was made responsible for the spinning as well as for the weaving. This change is easily understood and may well have taken place owing to the friction that would arise through abatements for bad work.

But during the period covered by the two quotations, another change had taken place which is referred to by Guest. He informs us that it was in 1740 that "the Manchester merchants began to give out warps and raw

[1] Ogden, *ibid.*, p. 74. It will be noticed that the statement regarding wool being given to the weavers means cotton-wool ready spun—weft—as is made clear in the next quotation.
[2] *Ibid.*, p. 88.

cotton to the weavers, receiving them back in cloth and paying for the carding, roving, spinning and weaving" [1] and that about 1750 there arose, chiefly in the country districts, a class of "second-rate merchants called fustian-masters," who "gave out a warp and raw cotton to the weaver, paying the weaver for the weaving and spinning." [2]

In view of the legislation just referred to, it is evident that the first date mentioned by Guest cannot be taken as marking the beginning of the system of giving out work in the fustian trade, and perhaps the second date relating to the appearance of country fustian masters should not be strictly regarded. With these reservations, however, there is much evidence that Guest's statements were based upon facts which belong to the first part of the eighteenth century. The increased prominence of printed fustians and the proceedings which led to the Act of 1736 indicate that the fustian trade was expanding. About the same time, changes were taking place in commercial organisation, and it is exceedingly probable that the number of fustian manufacturers was increasing with accompanying changes in industrial organisation. In 1772, when we get definite evidence, it is certain that a large number of fustian manufacturers existed in the country districts, and altogether their number was far greater than either check or smallware manufacturers.[3] The conclusion that may be drawn from the statements of both Ogden and Guest, and from other evidence, is that even if it be true that before the first part of the eighteenth century the greater proportion of fustian weavers were semi-independent producers, who themselves bought their raw materials, and sold their product to traders, by the middle of the century they were certainly the workpeople of capitalist employers, as probably many of them were long before that time.

[1] Guest, *Compendious History of the Cotton Manufacture* (1823), p. 9.
[2] *Ibid.*, p. 11.
[3] *Infra*, pp. 67-69.

II

Fortunately, there is ample evidence of the organisation of the check and smallware trades in the fifties of the eighteenth century, and this evidence is important in that it shows clearly the relations which existed between the employers and the workpeople engaged in these trades at that time. In both trades the relations were exceedingly strained, and in both the workpeople attempted, through combination, to maintain and advance their economic position. As a matter of fact, the worsted smallware weavers had had some form of combination for some years. In 1756 their articles contained regulations concerning their trade which dated back to 1747. The articles show that there were two main classes engaged in the trade: first, the manufacturers, who were the real employers; second, the undertakers, journeymen, and apprentices. Their aim was to protect the interests of the latter class, particularly of the undertakers. The difficulties they were intended to meet are revealed in *The Worsted Smallware Weavers' Apology* issued in 1756, and the *Apology* also throws light on the development of the trade during the preceding thirty years.

Before that time the work had been performed in a single loom, but, about that time, this loom was displaced by a Dutch loom,[2] which, instead of weaving one piece at a time wove twelve or fourteen, and also improvement took place in the character of the product. In 1756, the weavers asserted, there were three times as many Dutch looms in use in Manchester as there ever had been single looms. As a consequence of the improvements, the scope of employment had widened and many of the poorer sort of people had entered the trade, while the generality of manufacturers had acquired such large fortunes as enabled them to vie with some of the best

[1] Manchester Reference Library, No. 28266.

[2] *Cf.* Ogden, *ibid.*, p. 82, also Chapman, *Lancashire Cotton Industry*, pp. 19-22, where the loom is described.

gentlemen in the county. With the weavers the case was different, owing, they asserted, to their own conduct in taking too many apprentices on any terms, and for any length of time, and also, for a small sum of money, taking persons into the trade who were immediately recognised as journeymen. As a result, the trade had become overcrowded with labour, and many who had entered it had gone back to their old occupations, while others had turned to day labouring in the summer and returned to the loom only in the winter, when they were content to work on any terms, which soon became the general rule. Moreover, men who had served only a year or two lowered the standard of workmanship, as in such a short time they were unable to learn the theory of the trade.

The first article, dated 1747, laid down that no undertaker should take apprentices for less than seven years, unless they were fifteen years of age, when they might be taken for six years. Masters taking apprentices had to enter them in the weavers' register-book, twopence to be paid on entry, and, when an apprentice had served his time, a blank had to be taken out for which fourpence had to be paid. Afterwards the apprentice was free to work either as a journeyman or as an undertaker. In a later article it was agreed that if any member went to work, or undertook work, for any master that had never made goods before 1st January 1753, "the same shall not be accounted one of us." Later in the year, it was agreed that no undertaker should take more than three apprentices, and, in the next year, it was further agreed that every undertaker should demand a blank from any journeymen or journeywomen when they came to work with him, and if an undertaker failed to comply with this regulation he must forfeit five shillings to the box. In the last article, dated 11th August 1753, it was agreed that any undertaker bringing up his sons or daughters to the trade should enter them in the register at twenty years of age, when they should receive a blank which would enable them

to work as journeymen or undertakers for any master in the trade.

There are several points of interest in these articles. In the first place, it is evident that the master manufacturers as well as the weavers took apprentices, and that the weavers wished to bring them under their control. In the second place, it appears that women were recognised in the trade as subject to the same conditions as men. Thirdly, the increasing stringency of the articles suggests either that the combination was developing, or that the articles were not attaining the end in view. Probably both suggestions are correct.

In 1756 the problem of remuneration had become acute, and the organisation was evidently on the point of taking an active interest in the matter. This increased activity was the beginning of trouble which culminated at the Lancaster Lent Assizes in 1760. To understand the position during these years it will be advisable to glance at the general situation in the country.

As early as 1753 there had been serious disturbances consequent upon a rise in the price of food. At Bristol it had been necessary to call out the military to prevent the plundering of corn vessels in the harbour, and similar measures had been adopted to maintain the peace at Manchester and Leeds, which was only accomplished with loss of life.[1] At the beginning of the year the price of wheat in Manchester ranged from 18s. to 20s. per load—20 Winchester pecks—and other cereals in proportion. Then there began a rise which in August had brought the average price of wheat to 25s. to 26s., which continued throughout 1754.[2] Early in 1755 the prices had come down, and remained almost without change at 21s. to 22s. for more than twelve months. From about May, 1756, prices began to rise again. In June they stood at 27s. to 28s., in December at 34s. to 36s., in February, 1757, at 39s. to 40s., and in

[1] Smollett, *History of England* (1818 edition), iv., p. 177.

[2] The prices of cereals in Manchester are given weekly in *The Manchester Mercury* until 1766 and spasmodically afterwards.

July at 43s. to 45s. Then they began to fall, reaching 30s. to 31s. in December, and in October, 1758, the old price of 21s. to 22s. had been regained.

Reports of rioting in every part of the country began in the autumn of 1756, and were constantly repeated until the end of the following year,[1] and the distress extended to Scotland and Ireland, the King subscribing £20,000 for relief in the latter country.[2] At Liverpool in November, 1756, it was decided to buy several thousand pounds' worth of grain, at the expense of the town, to be retailed to the poor at cost price, and a subscription list was opened at Manchester in the following month for a similar purpose, when between £700 and £800 were immediately subscribed.[3]

In the view of the populace the evil was due to the action of trading middlemen engrossing and holding back supplies, and in Manchester, as in other places, when a riot broke out, in which a number of colliers from Clifton took part, the object of attack was certain corn dealers, who vainly protested that, instead of engrossing, they had imported corn from remote parts of the kingdom and thus lowered prices.[4] A proclamation of the King against the forestalling, regrating and engrossing of corn was issued in Manchester,[5] and apparently in every other town in the country, while threats of prosecution, of which the gentlemen of the town were prepared to bear the expense, were issued against the guilty persons, could they be discovered.[6]

It was in these circumstances that the worsted smallware weavers of Manchester began to show a greater activity than hitherto, and issued their *Apology*. They complained of the rise in the prices of provisions and asserted that, eighteen or twenty years before, undertakers could have kept five apprentices for what it now cost to keep three. In 1756 they had commenced to

[1] In *The Manchester Mercury*. [2] *Ibid.*, 21st June 1757.
[3] *Ibid.*, 11th November, 28th December 1756.
[4] *Ibid.*, 14th and 21st June 1757. Rioting took place in Stockport in September. *Ibid.*, 30th September.
[5] *Ibid.*, 14th December 1756. [6] *Ibid.*, 8th November 1757.

hold meetings once a month. The hands employed by each manufacturer were regarded as a "shop." Each shop appointed a person to represent the whole shop, and when the representatives met once a month they formed the trade society.[1] Already the manufacturers suspected that the proceedings were to their detriment, and the weavers were aware that they were likely to meet with a great deal of censure and scornful sneers, but they consoled themselves with the thought that they were as the Nazarenes, and those who held them in contempt were as the Jews.

The next evidence of the existence of the society appears in January, 1759, when the following notice was issued in *The Manchester Mercury*[2]:—"Whereas all combinations and meetings among Weavers or other handicraft workmen or servants to consult how to raise wages, or make other rules or orders among themselves that have a tendency to ruin and destroy the trade in which they are employed is contrary to the Laws of the Kingdom. And whereas there is at this time in and about this town an unlawful combination among the Worsted smallware weavers, under the name of being members or being connected with or payers to a Box. This is to give notice that all persons who are in any ways concerned in those unlawful combinations, or are in any ways aiding or assisting thereto, will be prosecuted to the utmost rigour of the law; and that no weavers will be taken to work that are in any ways concerned in those unlawful combinations."

The next important act in the life of this association was performed at Lancaster Assizes in the following year, when a number of worsted smallware weavers answered to an indictment for a combination to raise wages. The prosecution was not proceeded with as the defendants handed in the following submission, which

[1] *Smallware Weavers' Apology*, p. 9. There is no reason to think the word "shop" referred to a workshop in the ordinary sense. Possibly the place where work was given out and taken in was called a shop.

[2] 9th January.

was read in the open court, and afterwards signed by them. "We do hereby, each for himself, and as far as we can for the other weavers of the same Trade agree to work for the prices already agreed upon with our respective masters, or such other wages as the circumstances of the Trade make reasonable for the time being. We hereby promise and engage, each for himself that we will never enter into, or promote, or encourage any Combination whatsoever, for the raising wages, or any other unlawful purpose whatsoever. And we declare against, and will oppose, any agreement or Combination . . . or that any money shall be applied . . . to the support of any person, or persons, who shall refuse to work for reasonable, or the usual wages, being able and requested so to do, or in any wise whatsoever towards the forming or supporting any combination to raise wages or other unlawful purpose whatsoever. That the Box or contribution may be permitted till the debt already incurred be discharged and the defendants promise to produce the Box and show their accounts therein, to any of the Masters in any part of Manchester upon a reasonable notice for that purpose, and that when the Debt is discharged, the contribution shall cease and the Box be destroyed, and in the meantime, the Indentures shall be delivered to the Parties thereto if they desire it."[1]

The combination of the worsted smallware weavers was not the only one in the Manchester district in the late fifties of the eighteenth century. As already mentioned, the check-weavers had also combined. So acute had the position become that at the Autumn Assizes held at Lancaster in 1758 Lord Mansfield "had been informed of great disturbances in Lancashire, occasioned by several thousands having left their work and entered into combinations for raising their wages, and appointed meetings at stated times, formed themselves into a committee at such meetings, and established Boxes and fixed stewards in every Township for collecting money for supporting such weavers as should by their

[1] *Manchester Mercury*, 25th March 1760.

Committee be ordered to leave their masters, and made other dangerous and illegal regulations; that they had insulted and abused several weavers who had refused to join in their schemes and continued to work; and had dropt incendiary letters, with threats to masters that had opposed their designs; his Lordship sensible of the pernicious consequences of such illegal proceedings as being not only destructive of Trade and Manufactures, but of the Peace of the Public adapted his charge to the occasion, and strongly urged to the Jury the necessity of suppressing all such combinations and conspiracies on any pretence whatsoever; gave them an account of all the attempts of the like nature that had been made at different times and in different parts of the kingdom, and told them that an active and vigilant execution of the Laws in being, had always been sufficient to suppress such attempts, and, if properly executed, would have the same effect upon the present that it had always met with on similar occasions." As the judge had spoken without notes, he could not oblige the Grand Jury with this charge in writing, as they requested, but he issued a warrant for the apprehension of nineteen stewards concerned in the combination, and prosecutions were recommended against others as being equally culpable.[1]

The judge's charge was intended, no doubt, to be of general application, but it appears that it had particular reference to the check-weavers. The story of their combination can be gathered from the pages of *The Manchester Mercury*, supplemented by *A Letter to a Friend: occasioned by the late Disputes betwixt the Check-makers of Manchester and their Weavers*, written by Thomas Percival[2] in 1759. Mr. Percival had been mentioned to

[1] *Manchester Mercury*, 5th September 1758. *Gentleman's Magazine*, 12th August 1758. Smollett, *ibid.*, v. 439-440.

[2] Mr. Thomas Percival (1719-1762) must not be confused with Dr. Thomas Percival who, later in the century, became prominent in his endeavours to improve the conditions in the cotton factories particularly as regards children. The Thomas Percival referred to in the text lived at Royton, near Oldham. The check manufacturers spoke of him as "a landed proprietor" and as

the judge as one who had assisted the weavers in their efforts to combine,[1] and his letter was a pungent reply to the charges. It appears that originally there were two main points of dispute between the check manufacturers and the weavers: first, the question of a standard length of cloth for weaving, and second, the question of "unfair weavers." [2] Ultimately these questions led to a combination and a turn-out of several weeks in which the weavers in Manchester and for many miles around were involved.

According to Mr. Percival's account, he was approached by some of his neighbours, check-weavers, about a year before he wrote his letter, when they informed him that they had been solicited to enter a Box to oppose the unlawful practices of their masters. At the time he advised them not to do so, but some of them became members and later the dispute became an open breach.[3]

In April, 1758, a notice was issued in *The Manchester Mercury* drawing attention to the fact that "Weavers employed in manufactures carried on in Manchester and neighbouring towns, had formed themselves into unlawful clubs and societies, and had entered into combinations and subscriptions," and that anyone who would not enter, or would withdraw, would be protected and employed.[4] This notice had not the desired effect, and it seems probable that the turn-out began in May or at the beginning of June. Early in July the situation had become acute and the weavers of Ashton sent to ask Mr. Percival whether they were doing right, to which he replied that "if they were doing what the world said, they were doing excessive wrong." [5]

About this time the weavers met at Manchester, and

one who was "known to be an enemy of oppression of all kinds." He was a Justice of Peace, a Whig in politics, and wrote in opposition to the High Church clergy and the non-jurors in Manchester. In his day he was well known as an antiquarian and was elected F.R.S. in 1756 and F.S.A. in 1760 (*Dict. of Nat. Biog.*, xliv., p. 383).

[1] *Letter to a Friend*, p. 5. [2] *Ibid.*, App. I. [3] *Ibid.*, p. 10.
[4] 25th April 1758. [5] *Letter to a Friend*, p. 12.

put forward a set of proposals for a settlement of the dispute, which was followed by two other sets, one drawn up at Ashton, and the other by Mr. Percival himself.

In the first, the weavers proposed that a statute length of eighty yards should be fixed for check, and of sixty yards for cotton hollands, cotton linen and similar articles, and that, if the length was different, the price paid for weaving should vary in proportion. Also, that the masters should not employ unfair weavers, so called because they would not subscribe to the charity stock to assist poor weavers and to prosecute offenders. The weavers insisted that they had no other object in view but to support and maintain their trade with experienced and honest workmen, and to bring it under the statute 5 Eliz.[1]

[1] *Letter to a Friend*, App. I. The Act referred to is the Statute of Apprentices, 1563, and it is evident that the check-weavers were giving to it, as did other workpeople during the eighteenth and early nineteenth centuries, an interpretation which was not in the minds of its originators. The two clauses of the Act upon which they invariably fixed were those relating to the assessment of wages and to apprentices. The original Act, among other things, authorised Justices of the Peace to assess wages, taking into account "the plenty or scarcity of the time." The wages thus assessed were maxima not minima, and penalties were provided for those who paid or received more than the maxima. In 1603 the statute was re-enacted, and, at this time, so far as the workers in the woollen industry were concerned, the rates fixed were to be minima, but it appears that few assessments were made on this basis—they were made on the "not more" basis, not on the "not less." In the industrial changes of the eighteenth and early nineteenth centuries workpeople desired the latter, and frequently requested the enforcement of the Act with this object in view, and it figured prominently in the demands of the rising organisations. The clause relating to apprenticeship laid down that after the passing of the Act no one should exercise "any art, mistery, or manual occupation" without first serving a seven years' apprenticeship, and why the workpeople in the eighteenth and the early nineteenth centuries desired the enforcement of this clause is clearly explained by the same reasons as underlay their desire for the assessment of wages. The Statute of Apprentices cannot be fully understood unless it is read as a whole, with a background given by the conditions in the middle of the sixteenth century. When this is done the statute becomes important not as a great constructive piece of statesmanship, but as indicating the outlook of statesmen on the social

It appears that, about this time, a suggestion was made that the dispute should be referred to the country gentlemen for settlement, or to Mr. Percival alone, and also that he saw the above proposals, and that he disapproved of them.[1]

In any case, a second set of proposals was addressed to him from Ashton by the weavers, with the request that, if he thought proper, he would put them into form and make such alterations as he might find necessary for bringing about an accommodation between the parties.[2] In these proposals, it was suggested that seven men should be appointed by each side, including one or two magistrates, and that the magistrates should choose (presumably from among those who had been thus appointed) four persons who had been in the trade, but who had no present connection with it, to settle the differences. Cases of spoiled work, which the master and weaver concerned could not settle, were to be referred to two persons chosen by them, both parties to submit to their decision. The masters were to allow the weavers to keep a charity box, and the weavers were to have liberty to take two or more apprentices, but not for a shorter period than seven years, and no person was to be acknowledged as a weaver unless he or she had served that time, although all weavers then engaged in the trade were to be recognised. The weavers still asked that a standard length of eighty yards should be fixed for certain kinds of goods, but the length of other kinds was to be fixed by the committee, and wages were to be agreeable to the times as heretofore.[3]

Evidently Mr. Percival did not consider that these

and industrial problems of their day, and as a futile attempt to check the operation of forces which for long had been irresistibly making for change. The wages clause was finally repealed in 1813 and the apprenticeship clause in the following year, but long before they had become practically obsolete (Unwin, *Industrial Organisation*, pp. 137-141, 252; Tawney, *The Assessment of Wages in England by Justices of the Peace*; Cunningham, *Growth of English Industry and Commerce*, pp. 25-44; S. and B. Webb, *History of Trade Unionism*, chap. i.).

[1] *Letter to a Friend*, p. 48. [2] *Ibid.*, p. 13. [3] *Ibid.*, App. II.

proposals would effect a settlement, and proceeded to draw up a set of his own. Generally, his proposals did not differ from the proposals from Ashton, except in the vital point of the "box." He proposed that a box should be kept up for the relief of poor weavers, and for the prosecution of offenders, but that the funds should not be used to the detriment of the masters. To disarm the suspicion of the masters, he proposed that they should become contributors to the box, and that no money should be taken out of it (except for the relief of the poor) without the knowledge of at least two of them, which arrangement the weavers thought very hard, and Mr. Percival himself was afraid that they would not agree to it, but they did so.[1] A further proposal made by him was that an Act of Parliament should be moved for, on the joint-petition and at the joint-expense of the masters and weavers, to fix the lengths and breadths of cloth, and to enforce a seven years' apprenticeship in the trade.[2]

Mr. Percival's proposal as regards the box, and also the proposals from Ashton, will be best understood by noticing the masters' case as it was stated in a letter addressed to him by one of them. In this letter it was claimed that it was impossible with justice to fix a standard length of cloth as the weavers proposed, but that the masters were willing to agree upon a length "as near as possible." Further, it was insisted that the weavers must give up their combination, and sign a paper to that effect, and that the masters must not be obliged to turn off unfair weavers. Apparently, the master who wrote this letter was an extremist, as Mr. Percival expressly excepts from his indictment some masters who did not take up this attitude concerning the combination.[3]

The paper which the weavers were required to sign

[1] *Letter to a Friend*, p. 14. [2] *Ibid.*, App. III.

[3] *Ibid.*, p. 8. As another example of the number of people employed by one concern in the early eighteenth century, it may be noticed that one check-maker stated that he would employ 500 weavers if he had not to turn off unfair men.

appeared in *The Manchester Mercury* on the same date as the letter sent to Mr. Percival, and ran as follows:—

"We whose names are hereunto subscribed being members of the Weavers Society, and contributed or promised to contribute to their Box, do hereby engage that we will quit the said Box; and neither by ourselves or (*sic*) any person for us, pay towards supporting it, nor have any further concern therein." [1] In the following month the charge already referred to was delivered by Lord Mansfield, and in October a notice was published setting forth that "The Manufacturers in the Check Trade having found on Enquiry that the principal Boxes are destroyed, and the collections or contributions ceased, Work will now be delivered throughout the Town, and the Weavers may apply where they choose as usual." [2]

In the meantime, however, it appears that the threatened apprehensions had been effected, and at the Lancaster Spring Assizes in 1759 thirteen check-weavers from Manchester, two from Pendleton, two from Salford, and one from Rusholme, were charged with "having unlawfully met and assembled together and illegally and unjustly combined and confederated that they would not work at less than 2s. the piece above the usual wage or price of eighty yards check." [3] At the trial a plea for lenity was put in, and, as the weavers conducted themselves in a correct manner, the only penalty imposed was a fine of 1s. each. In his address to them, Lord Mansfield suggested that they had been drawn into the combination by designing men, and pointed out the danger of combinations in raising wages above what had been customary and what the trade would bear, thus driving capital away. His remarks on the apprenticeship clauses of the Elizabethan Act deserve notice, seeing that they were made more than half-a-century before the clauses were repealed: "If none must employ, or be employed, in any branch of trade, but who have served

[1] 25th June 1758.
[2] *Ibid.*, 17th October 1758.
[3] *Letter to a Friend*, App. VIII.

a limited number of years to that branch, the particular trade will be lodged in few hands, to the danger of the public, and the liberty of setting up trades, and the foundations of the present flourishing condition of Manchester will be destroyed. In the infancy of trade, the Act of Queen Elizabeth might be well calculated for public weal, but now when it is grown to that perfection we see it, it might perhaps be of utility to have those laws repealed, as tending to cramp and tie down that knowledge it was first necessary to obtain by rule." In conclusion, the Judge admonished the check-weavers to "Go home and sin no more lest a worse thing happen unto you." [1]

This account of these two combinations in Manchester and district in the fifties of the eighteenth century is of considerable interest in several respects. Mr. and Mrs. Webb have drawn attention to the fact that, in these years, we get the final breakdown of the mediæval authoritative system of regulation of industrial relationships, and the above account supports their view.[2] Also they have shown that from the early years of the century combinations of wage-earners were coming into existence in various trades. Such combinations were especially prominent among the West of England textile workers [3]: it is evident that the textile workers in Lancashire were proceeding on similar lines. But even more interesting is the link which these Manchester combinations provide between the older forms of association on the one hand and the modern trade union on the other. The proposals put forward by Mr. Percival, which the check-weavers reluctantly accepted, would have involved almost exactly the same arrangements as those described by Professor

[1] *Manchester Mercury*, 3rd April 1759.

[2] *History of Trade Unionism* (1911), p. 44.

[3] *Ibid.*, p. 28. The first instances given by Mr. and Mrs. Webb from *The Journals of the House of Commons* of combinations in this district are in 1717. Earlier instances appear in 1706 from Taunton and Bristol. In the Taunton petition it is stated "that within 4 or 5 years" weavers in most towns where woollen manufactures are made have formed themselves into clubs (*J.H.C.*, xv., p. 312).

Unwin as existing between the members of the Yeomanry Organisations and the members of the Livery Companies.[1] As the arm of the law intervened, it is not likely the proposals came to anything, but this does not necessarily mean that the law quashed the combinations. Judging from the later history of the smallware weavers, it appears that they gained in strength. The next glimpse we get of their combination is in 1781, when a dispute was in existence which certainly continued for more than two months. The first evidence of it is a notice which the weavers delivered to their employers, in which it was stated that the whole trade had unanimously resolved that if they did not set their men to work, agreeable to a list of prices accompanying the notice, no smallware weaver in Lancashire would ever work for them again.[2] On their side, the masters asserted that they were willing to adjust wages, but insisted that the real difficulty was that the weavers had adopted the "extraordinary" step of "swearing two masters out of the trade," [3] which, they claimed, was contrary to all law and equity. Ultimately the masters delivered the following proposals to the weavers, which are interesting not only as an indication of the respectful way in which the weavers had to be dealt with, but also as the reference to the "shop" suggests that even if there had been a break in the life of their combination, re-establishment had taken place on the same basis of organisation as that of twenty-five years before: "It is hereby mutually agreed between the small-ware manufacturers and their weavers (the masters and one of each shop having subscribed the same) that all differences are settled and adjusted, and that all the said weavers look upon and esteem all their said employers as fair and upon an equal footing in the Trade, notwithstanding whatever may have been inconsiderately said or done during our late difference or dispute: and

[1] *Industrial Organisation in the XVIth and the XVIIth Centuries*, pp. 51, 58-61, 123, 135, 198-199, 208-210, 229-234.
[2] *Manchester Mercury*, 7th August 1781.
[3] *Ibid.*, 11th September 1781.

we the said weavers on behalf of the whole trade consider every workman at full liberty to take work for any of the said employers without exception." Apparently these proposals were not altogether satisfactory to the weavers, who replied that it had been unanimously determined by the whole trade that no other notice except one that they transmitted should be published: "By mutual agreement betwixt the Small-ware Manufacturers and their Weavers the differences respecting prices subsisting between them are amicably settled to the satisfaction of both parties." [1] The masters seem to have been equally reluctant to accept this notice, but as no others appear we may assume that the dispute was near its end.

Sometimes it is implied, particularly in popular writings, that the transition from the domestic system, as it existed in the early eighteenth century, to the factory system involved a great change in economic relationships, almost that it marked the emergence of capitalist employers. If disproof of this view were required, this account of the disputes in the smallware and the check trades in Manchester, a generation before factories definitely appeared in the district, would do something to supply it. The fact is, of course, that the domestic system was a system of capitalist employers, and the typical workpeople were in every essential respect related to these employers in the same way as after the factory made its appearance. In the domestic system the employer's capital was mainly embodied in the materials that were given out to workpeople, and they received a wage remuneration from him for the operations they performed upon them. Between the journeymen and apprentices, and the employer, there frequently intervened persons such as the "undertakers" men-

[1] *Manchester Mercury*, 2nd October 1781. In addition to the smallware weavers there is evidence of organisation in the following trades before 1790: silk weavers, hatters, calico and fustian printers, cotton-spinners, and paper-makers. The hatters were presented with the "document" as early as 11th February 1777 (*Manchester Mercury*).

tioned in connection with the smallware trade, but these men were essentially employees, even though in many cases, no doubt, they might own three or four looms. In the factory, the workpeople, who previously had been scattered over a more or less wide area, were drawn together under one roof, and their operations supervised by foremen and managers ; the capital of the employers was now embodied in materials, buildings, plant and machinery ; the least change was seen in the economic relationships between employers and workpeople. If it is true that labour became more dependent upon capital, it is equally true that capital became more dependent upon labour—on both sides the dependence involved was one of a greater co-operation in the processes of production.

But there was an important social change, closely connected with the decay of authoritative regulations which had been proceeding from the seventeenth century. As these regulations disappeared, the way was opened for the workpeople to begin to organise themselves as a new social class. Along with the development of the system of organisation which became dominant from the eighteenth century, the modern trade union movement was born, and through the greater part of the century it was also developing. Unfortunately, before the end of the century, under the stress of conditions consequent upon the Revolutionary and Napoleonic wars, its natural growth was checked, and it did not begin to thrive again until these conditions had passed away.

III

To complete this brief account of the organisation of the Lancashire textile industry before the coming of the factory and the rise of the new cotton manufacture, it is necessary to say something of the ways in which the manufacturers were connected with their workpeople, and also of their connections with the markets for raw materials and for finished products.

As regards the first point, it must be borne in mind that, while Manchester was the centre where the greater number of manufacturers were situated, a large number, particularly in the fustian branch, lived in the surrounding smaller towns and country districts. A glance at the following tables and the accompanying map will show that the country fustian manufacturers formed an outer semicircle of Manchester, with three outstanding points at Leigh, Bolton and Oldham. The country check-makers formed an inner circle, while the crofters (bleachers) were distributed in another circle, with a tendency to concentrate in the neighbourhood of the town.

Owing to this distribution of manufacturers, it is evident that most of the workpeople would be within easy reach of an employer, and probably the most usual thing was for them to fetch their materials from his house, or warehouse, and after working upon them, to return the product. The smaller manufacturers no doubt performed the "putting-out" function themselves, but the larger manufacturers employed men for this purpose, as the frequent advertisements for "putters-out" show. Also we can gather from the same source that in some cases "putters-out" for the town manufacturers lived in the country, and that country manufacturers sometimes worked on commission for men in the towns.[1] That some of the manufacturers were men of considerable wealth may be surmised from the frequent mention of their marriages into prominent families, and to ladies possessing "genteel fortunes." In this way it is not unlikely that much capital found its way into the Lancashire textile industry, and proved useful in enabling the manufacturers to extend their concerns.[2]

[1] For "putting-out" system, see Radcliffe, *Origin of Power Loom Weaving* (1828), pp. 13. 16, 68. Gaskell, *The Manufacturing Population of England Anterior to the Application of Steam* (1833), p. 17.

[2] In Mr. Percival's *Letter to a Friend* the following passage appears which is none the less informative because it is satirical:

In the seventeenth and the early eighteenth centuries, as at the present day, little of the raw material used in the Lancashire textile industry was produced in the county; one way in which wool reached the worsted manufacturers is given in a quotation below.[1] But more important than wool were linen-yarn and cotton. Until the West Indian colonies and South America became important sources of the supply of cotton, it was chiefly imported through London, indeed it was not until cotton-growing had developed in the United States that London lost its position to Liverpool as the chief port of entry.[2] Early in the eighteenth century, however, much was imported by Liverpool merchants, and it was also

"Another objection against me in common with other gentlemen, is, that we envy these check-makers; really, sir, I wonder what any country gentleman can be supposed to envy them for! Is it their houses? What country gentleman has reason to envy the possessor of a house of four, five, or six rooms of a floor with warehouses under and warping rooms over? . . . Is it their furniture? See one room drest out like a baby house. . . . Is it their equipages? Surely no, when one sees their chariots or post-chaises, with a pair of callender tits, and the callender lad for coachman, it must set any spectator a-laughing at the grotesque, did not the honest horses by hanging down their heads shew that they were ashamed of their employment. Is it their cookery? Here indeed I am almost at a stand to find a reason, which a Manchester check-maker will allow for a good one, why the country gentlemen do not envy their cookery; but on recollection I have one; they must allow it as a maxim, *that the heart grieves not at what the eye sees not*; and no country gentleman that I have ever heard of, could ever yet certify what was for dinner in the house of a Manchester check-maker. The reason their good wives believe we envy them their cookery, is, that when they move into the country for some weeks in the summer, the cook is too covetous to move his shop after them, and, as they know not how to get in their own families, anything more than plain boiled or roast, they are wise enough to believe nobody knows more, and because they are half starved whilst they are out of the town of Manchester, imagine there is no good livelihood anywhere else. Is it their fine clothes? Upon my honour I know many country gentlemen better dressed. Is it their handsome perriwigs? to comfort us country folks, I know few with worse heads . . ." (pp. 9-10).

[1] *Infra*, p. 61.

[2] *Treasure of Traffike*, p. 32. Ellison, *Cotton Trade of Great Britain*, p. 170.

imported through Whitehaven and Lancaster, both these ports having an important trade with the West Indies in the eighteenth century and into the nineteenth.[1]

Of the linen-yarn used, some was spun in this country, and Scotland also contributed to the supply, and, as already noticed, in the reign of Henry VIII., merchants from Ireland carried on a trade in linen-yarn with Manchester, which they sold to the inhabitants on credit.[2] In the eighteenth century, that country with the Continental towns of Hamburg, Bremen, Dantzig, and Königsberg had become the important sources of supply, so far as the Manchester district was concerned, where English and Scotch yarn were little used.[3] The finest quality was Irish web-yarn, which was used in the Blackburn manufacture, Drogheda yarn and Sligo yarn occupying the second and third places, with Hamburg and Bremen yarn as substitutes; fine Sligo yarn was also used as weft for African goods and for handkerchiefs.[4] The yarn from Dantzig and Königsberg (known as Ermland yarn from the bishopric of Ermland) was used in the manufacture of sheeting, and this yarn and Derry tow yarn were also made into checks and other goods for exportation.[5]

Both cotton and yarn reached the manufacturers through cotton merchants and yarn merchants, of whom there were many in Manchester.[6] Trading connections with Germany were maintained through travellers who sought orders from Manchester merchants and manu-

[1] *J.H.C.*, xxii., pp. 566-567. Slack, *Remarks on Cotton* (early nineteenth-century pamphlet). Aikin, *England Delineated* (1790), pp. 39, 83. Aikin, *England Described* (1818), pp. 26, 87.

[2] *Ante*, pp. 30-31. In 1639 the Town Jury of Manchester ordered "that Anne Thorp, widow, shall have the keepinge of the scales and waights usuall for wayinge of Ireish yarne" (*Court Leet Records*, iii., p. 321). It was stated in evidence before a Committee of the House of Commons in 1736 by one witness that he bought linen-yarn, from a person in Northumberland, in one transaction, to the value of £1000 (*J.H.C.*, xxii., pp. 566-567).

[3] *Life and Correspondence of Samuel Hibbert Ware* (1882), pp. 96-98.

[4] *Ibid.*, p. 98. [5] *Ibid.*, pp. 97-98. [6] *Infra*, p. 68.

facturers, and German houses had branches in the town; also, Manchester tradesmen went to Germany themselves.[1] In addition, both cotton and yarn were sold by Manchester shopkeepers, who advertised these commodities along with such incongruous articles of merchandise as Dr. Daffey's elixir, Anderson's pills, tea, toys, jewellery, fiddle-strings, etc.[2]

As the raw materials reached the manufacturers through Manchester merchants, so did the finished products reach their markets.[3] In the case of the Chethams at the beginning of the seventeenth century, as we have seen, one part of their establishment was in Manchester and the other in London, and the same system was in vogue with firms in the eighteenth century. The Chethams appear to have confined themselves to home trade, mainly to that with the London market, although they had dealings with Irish manufacturers and sent goods to the Irish markets.[4] In the sixteenth and the seventeenth centuries, however, Manchester goods were exported to foreign countries, and during the first part of the next century considerable progress appears to have been made particularly in trade to the British Plantations.[5]

The statement of Aikin that in the first decades of the eighteenth century the trade was carried on through wholesale dealers at London, Bristol, and other ports, is probably correct, and there is also evidence of the accuracy of his later statement that, during the twenty

[1] Ware, *ibid.*, pp. 17-18. In these pages some memoranda of a commercial traveller for a Dantzig house preserved among Dr. Ware's papers are given. *Manchester Mercury*, 3rd March 1772, contains a notice of the funeral of Daniel Kahl, eminent yarn merchant, partner of Delius & Kahl, Bremen.

[2] In every issue of *The Manchester Mercury*.

[3] While there apparently was a distinction between merchants and manufactuers it should not be drawn too rigidly. *Cf.* Radcliffe, *ibid.*, p. 131: "All those great merchants were manufacturers with scarcely an exception."

[4] Raines and Sutton, *Life of Humphrey Chetham*, pp. 13, 127.

[5] *J.H.C.*, xiv., p. 498; xvi., p. 311; xviii., p. 543; xxiii., pp. 76-78.

or thirty years before he wrote (1795), "the increase of foreign trade has caused many of the Manchester manufacturers to travel abroad, and agents and partners to be fixed for a considerable time on the continent, as well as foreigners to reside in Manchester." [1] The fact that, in 1770, a group of Manchester merchants were sufficiently interested in the effects of a destructive fire at Antigua Island to open a subscription for the relief of the sufferers, suggests important trading connections with the West Indies, and in considering how these connections were maintained, an announcement in the previous year of the death of a Manchester merchant at Jamaica is significant.[2]

As already noticed, cotton goods were manufactured for the African trade about the middle of the eighteenth century, and Guest informs us that about that time fustians began to be exported in considerable quantities to Italy, Germany and North America.[3] Writing of the time prior to the great changes in the cotton industry, Radcliffe states that the Manchester manufacturing merchants either themselves, or through merchants at London, Bristol, or Hull, carried on a large trade with the Levant, sending goods as "adventures" to the fairs of Asiatic Turkey which afterwards reached the markets in the interior of Asia. But, according to Radcliffe, the most important trade, particularly in fustians, "the old staple, by which these manufacturing merchants were raised to their princely rank," was that with the North of China, carried on through Russia, a portion being "sent up the Black Sea, or overland from Smyrna by the Turkey Company," and "another portion found its way, in modern times, through Leipsic to Moscow, and down the Volga to the Caspian Sea." [4]

[1] Aikin, *Manchester*, pp. 182-184. Radcliffe, *ibid.*, p. 93.
[2] *Manchester Mercury*, 29th November 1769; 6th February 1770.
[3] *Ante*, p. 29, note. Guest, *Compendious History of the Cotton Manufacture*, p. 12. About this time Manchester traders figure in the petitions against the African and the Hudson Bay Companies.
[4] Radcliffe, *ibid.*, pp. 131-133.

An indication of how Manchester goods were distributed about the country at the beginning of the eighteenth century is given in two petitions presented to the House of Commons from some of the inhabitants of Manchester and Stockport in 1704.[1] The petitioners protested against their being regarded as hawkers and pedlars under an Act passed a few years previously, whereas in reality they were wholesale dealers who distributed goods to many parts of the kingdom by means of horse carriage. Aikin's account of the position at this time supplements their statement: "When the Manchester trade began to extend, the chapmen used to keep gangs of pack-horses, and accompany them to the principal towns with goods in packs, which they opened and sold to shopkeepers, lodging what was unsold in small stores at the inns. The pack-horses brought back sheep's wool which was bought on the journey and sold to the makers of worsted yarn at Manchester, or to the clothiers at Rochdale, Saddleworth, and the West Riding of Yorkshire." [2]

The pack-horse method of carriage was not peculiar to Manchester trade, but obtained generally. The system of travelling merchants was, however, especially characteristic of the Lancashire and Yorkshire cloth area, and these merchants were known as "Manchester men." [3] In view of the fact that they were frequently men of considerable wealth, it is easy to understand why they disliked being regarded as hawkers and pedlars subject to duties on account of their particular kind of trade. From Leeds these "'Manchester men' used to go with Droves of Pack-horses loaden with . . . goods to all the fairs and Market-towns almost all over the Island, not to sell by Retale, but to the shops by Wholesale, giving large credit. It was ordinary for one of these men to carry a thousand pounds worth of Cloth with him at a Time; and, having sold that, to send his

[1] *J.H.C.*, xiv., pp. 498, 504. [2] Aikin, *ibid.*, pp. 183-184.
[3] Smiles, *Lives of the Engineers* (1862), i., pp. 178-181. Westerfield, *Middlemen in English Business* (1915), pp. 313-314.

Horses back for as much more; and this very often in a Summer."[1] In all probability the description is generally true of Manchester in the early eighteenth century. But, at this time, the public carrier was beginning to displace the pack-horse,[2] and consequent upon his emergence, the particular class of merchants referred to ceased to travel with their goods, instead, they carried patterns and solicited orders, and afterwards dispatched the goods by the carriers. Thus there arose a class of men known as "riders-out," and after the middle of the century advertisements for them become very frequent in *The Manchester Mercury*. "It was during the forty years from 1730 to 1770 that (Manchester) trade was greatly pushed by sending these riders all over the kingdom."[3]

But this system could not develop fully until improvements in communications had been effected. So far as Lancashire was concerned, a start was made in 1720 with the Mersey and Irwell Navigation Act, though the contemplated scheme for a navigable waterway between Manchester and Liverpool was not completed until nearly twenty years later.[4] In the early fifties, road improvements were attracting much attention in Manchester, and the next twenty years witnessed a great advance in this direction in all parts of the country.[5] This development in road communication was accompanied by further development in water communication, the Act for the construction of the canal from Worsley to Manchester in 1759 marking a new starting-point. In 1762 the Act was passed for the canal from Manchester to Runcorn, where it joined the Mersey to Liverpool, and when it was completed the two towns were doubly linked by the old and the new navigations. The extent

[1] Defoe, *A Tour through Great Britain* (1769 edition), iii., p. 126.
[2] Westerfield, *ibid.*, pp. 362-363.
[3] Aikin, *ibid.*, p. 184.
[4] Baines, *Lancashire and Cheshire*, iii., pp. 84-85.
[5] *Manchester Mercury*, 1752 onwards. Smiles. *ibid.*, p. 206. Between 1760 and 1774 452 Acts were passed for making and repairing highways.

to which Manchester was connected with the rest of the country by road in 1772 may be seen from the number and the destination of the regular carriers in the town at that time.[1]

With these developments the system of travelling about the country with goods, although it had changed its character somewhat, had not lost its importance, nor did it lose it for a long time. It was carried on by "petty chapmen," and it was to such men that the terms hawkers and pedlars now applied. In the eighties of the eighteenth century a controversy arose, or rather one that had been simmering through the century reached the boiling point, which shows that men, thus designated, were still of great importance in inland trade.

As a result of the Seven Years' War, and the American War of Independence,[2] the country was faced with a financial crisis out of which the egregious "Sinking Fund" emerged, and many new taxes were levied to raise the required revenue. None raised such opposition in Manchester as the "fustian-tax" and the successful efforts to obtain its repeal were celebrated by an annual dinner for many years afterwards.[3] But the agitation against this tax was local, compared with that which arose in 1785 in connection with a tax on shops, and a proposal to repeal the licences of hawkers and pedlars, which was intended to make the shop-tax palatable. The proposal was carried into effect to the extent that additional duties were levied on hawkers and pedlars and their trade was regulated.

Before the proposal had taken the form of a Bill the manufacturers of Manchester entered a vigorous protest against it, as they did on other occasions after

[1] *Infra*, p. 71.

[2] National Debt, 1756, £72,000,000. End of Seven Years' War, 1763, £136,600,000. End of American War, 1783, £238,000,000 (Bastable, *Public Finance*, pp. 632-633).

[3] *Life and Correspondence of Samuel Hibbert Ware*, pp. 99-101. The Bill was introduced in August, 1784, and was quickly passed. It was resolved to repeal it in June, 1785. For the agitation, see *Manchester Mercury* and pamphlets published during these months. Details of the tax are given by Baines, *ibid.*, p. 328.

the Bill had become an Act.[1] For four years petitions and counter-petitions rained upon the House of Commons from all parts of the country, occupying a considerable portion of its *Journals* until 1789, when the shop-tax was repealed, and the Act relating to hawkers and pedlars amended.[2] The chief arguments of the shopkeepers against the itinerant tradesmen do not require recapitulation as they are still vigorously maintained. The minor arguments, that they dealt in smuggled and stolen goods and that they corrupted the minds and morals of the younger part of the community, may be attributed to the shopkeepers' zeal in controversy.[3] What the hawkers and pedlars—or petty chapmen—did, in fact, was to perform the useful function of linking up the country districts with the manufacturing and trading centres. In the first Manchester petition the chapmen were described as carrying goods from house to house in the country villages and districts remote from towns. It also referred to their great number in Lancashire, Staffordshire, Derbyshire, Yorkshire and Cheshire, and stated that their purchases were more considerable than had been apprehended, which no doubt was true. The manufacturers of Glasgow attributed to the chapmen no small part in the extension of manufactures in England and Scotland, through their introducing goods into places where otherwise they would not have been sent.[4] The best witness to their importance at this time is the multitude of petitions presented in their favour from the manufacturers and traders in every considerable town.

From these petitions the organisation of the trade can be clearly visualised. The custom was for the chapmen to obtain their goods from manufacturers and traders on credit, and then to sell them on credit. In this way a considerable amount of capital was used in the trade. The hawkers and pedlars of Halifax and neighbourhood asserted that they had outstanding debts to the amount

[1] *J.H.C.*, xl., p. 1001 ; xli., p. 283 ; xliv., p. 295.
[2] *Ibid.*, xliv., pp. 276, 422.
[3] *Ibid.*, xl., pp. 1107, 1109.
[4] *Ibid.*, p. 1039.

of £40,000, and that they again were indebted for large sums to merchants and manufacturers in London, Glasgow, Manchester, Leicester, Nottingham, Carlisle, etc.[1] But there were also capitalist traders in some parts of the country who, apparently, were solely engaged in supplying the chapmen with goods on credit.

This appears to have been the case with a member of "The Society of Travelling Scotchmen of Bridgnorth" who claimed to have £5000 employed in the trade.[2] His method was to buy goods from manufacturers in different parts of Great Britain and Ireland, and to supply them to the chapmen on credit, and, at the time, he had £3000 owing to him, while they had £1500 owing to them. Two members of a similar society at Shrewsbury, who pursued the same method, claimed to have £20,000 in the trade, with outstanding debts to the amount of £16,000, while the chapmen whom they supplied were in a similar position to the amount of £10,000.[3] Even allowing for some exaggeration in the petitions, there can be little doubt of the importance of the trade thus carried on at this time.[4] Possibly it was of more importance than some branches of trade of a more spectacular character, which, for that reason, often attract more attention.

In the preceding chapter it has been shown that a textile manufacture, which could be called a cotton manufacture, had become established in Lancashire certainly by the beginning of the seventeenth century. From what has been said so far, it will be apparent that the manufacture was by no means in a state of stagnation during the century and a half before 1770. Economically and politically, the period was a favourable one for development. The turmoil of the seventeenth century had an economic as well as a political significance. It marks the time when the opportunist regula-

[1] *J.H.C.*, xl., p. 1026. [2] *Ibid.*, pp. 1017-1018. [3] *Ibid.*, p. 1020.
[4] The hawkers and pedlars of London and Westminster stated that they composed part of a body which numbered 1400 in England alone (*ibid.*, p. 1007).

tions of industry and commerce, which are sometimes regarded as constituting part of a positive policy to further the welfare of the national community, definitely failed, notwithstanding much futile effort which continued into the next century.[1]

Consequently, the cotton manufacture was comparatively unhampered by such regulations, and it is not surprising that, particularly from the early years of the eighteenth century, development was taking place in all directions. Quite apart from the remarkable inventions of machinery and the discovery of a new source of power, it is more than probable that the latter years of the century would have witnessed considerable changes. Before these events, the developments in industrial and commercial organisation, and in communications, pointed to the fact that a wider economy was emerging. It was in such conditions that a new cotton manufacture made its appearance in Lancashire.

[1] The year 1623 marks an important date in this connection. Unwin, *ibid.*, p. 190, also *The Gilds and Companies of London*, ch. xvii. Professor W. R. Scott's *Joint-Stock Companies to 1720*, is a storehouse of fundamental facts relating to the economic history of the sixteenth and seventeenth centuries.

ANALYSIS OF CERTAIN TRADES IN MANCHESTER IN 1772

All the following tables have been compiled from the first Manchester Directory

Fustian	No.	Check	No	Smallware	No.	Silk and Linen	No.
Manufacturers	55	Manufacturers[2]	45	Manufacturers	37	Silk and Linen Manufacturers[3]	7
Cutters	23	Callenderers	7	Weaver	1	Silk Manufacturers and Silk Weavers[4]	10
Callenderers	14	Check and Fustian Manufacturers	12	Callenderers	3	Silk Mercers	4
Dyers[1]	9			Smallware and Fustian Manufacturers	5	Silk Dyers	4
Dressers	2			Smallware and Thread Manufacturer	1	Thread Makers	3
Shearers	3			Smallware Manufacturer and Hatter	1	Linen Drapers[5]	12
				Smallware Manufacturer and Hosier	1	Linen Dyers[6]	7
						Linen and Cotton Printers	3
Total	106	Total	64	Total	49	Total	50

[1] One described as dyer and printer.
[2] One described as manufacturer and printer.
[3] Two described as fustian silk and linen manufacturers.
[4] One described as silk and smallware manufacturer, two as silk throwsters, and one as throwster and dyer.
[5] One described as linen merchant.
[6] Two described as linen and fustian dyers.

Woollen	No.	Merchants	No.	Miscellaneous	No.
Manufacturers[1]	9	Yarn Merchants	14	Hatters[4]	15
Drapers[2]	8	Cotton Merchants[3]	5	Reed Makers	9
Dyers	4	Yarn and Cotton Merchants	3	Loom Makers	8
Woolcombers	2	Yarn Merchants and Check Manufacturers	3	Comb Maker	1
Woollen and Fustian Manufacturers	3	Yarn Merchant and Thread Manufacturer	1	Drum Maker	1
				Callender Maker	1
				Pattern Book Maker	1
				Fringe Makers	2
				Kendal Stuff Makers	2
				Velvet Dressers	4
				Cloth Dressers[5]	4
				Callenderers	2
				Twister	1
				Dyers[6]	9
Total	26	Total	26	Total	60

[1] One described as frieze-maker, one as woollen manufacturer and paper-maker, and one as worsted weaver.

[2] One described as woollen draper and cloth-worker, and one as woollen draper and check manufacturer.

[3] One described as dealer in cotton weft.

[4] One described as hatter and hosier, and one as hat-lining cutter.

[5] One described as dresser and cutter, and one as presser.

[6] One described as twister and dyer, and one as dyer printer and manufacturer.

In the fustian list there are 22 partnerships, in the check list 20, in the smallware list 11, in the silk and linen list 9, in the woollen list 2, and in the merchants' list 2.

COUNTRY TRADESMEN WITH WAREHOUSES IN MANCHESTER IN 1772

Fustian Manufacturers		Check Manufacturers		Miscellaneous		
Locality	No.	Locality	No.	Locality	Description	No.
Bolton . .	21	Gorton .	4	Ardwick	Yarn Merch't Chapmen .	2
Little Bolton	3	Prestwich .	3	Collyhurst	Woollen Manufacturers	2
Cocky Moor (Nr. Bolton)	3	Levenshulme .	2	Cheetham	Yarn Merch't Chapmen .	2
Horwich .	1	Rusholme .	1	Burnage	Yarn Merch't	1
Little Lever.	1	Fallowfield	1	Crumpsall	Linen and Cotton Merchant . .	1
Over Hulton	2	Moston .	2	Blackley	Frieze Maker	1
Leigh . .	8	Newton (Manchester) . .	1	Audenshaw	Woollen Manufacturer	1
Bedford (Leigh) .	1	Collyhurst .	1	Patricroft	Yarn Merch't	1
Chowbent .	6	Cheetham .	1	Wigan	Cotton Merchant . .	1
Lowton .	4	Pendleton .	1			
Astley . .	2	Flixton .	1			
West Houghton . .	2	Middleton .	1			
Oldham .	5	Audenshaw	1			
Lees . .	3	Failsworth.	3			
Clarkfield .	1	Werneth Low. .	1			
Austerlands.	1	Unidentified	2			
Loeside .	1					
Saddleworth	1					
Heywood .	3					
Bury . .	1					
Audenshaw .	1					
Ashton .	1					
Worsley .	1					
Haigh (Wigan) .	1					
Unidentified	3					
Total .	77	Total .	26		Total .	12

CROFTERS OR WHITSTERS IN THE MANCHESTER AREA IN 1772[1]

Locality	No.	Locality	No.
Newton (Manchester)	12	Brought forward	47
Droylsden	4	Cheetham	1
Gorton	4	Kersal	1
Openshaw	2	Prestwich	4
Audenshaw	1	Radcliffe	2
Levenshulme	6	Bolton	2
Kirkmanshulme	2	Little Bolton	2
Burnage	2	Harwood (Bolton)	2
Heaton Norris	1	Halliwell (Bolton)	2
Reddish	1	Oldfield Lane (Salford)	3
Blackley	8	Pendleton	10
Moston	1	Worsley	2
Harpurhey	2		
Failsworth	1		
Carried forward	47	Total	78

[1] In this list there are three partnerships.

Map showing the location of Manufacturers and Crofters in the Manchester area in 1772

Fustian Manufacturers red figures
Check ,, blue ,,
Smallware ,, yellow ,,
Crofters green ,,

The figures correspond with those in the preceding tables e.g. Manchester, 55 Fustian Manufacturers.

REGULAR CARRIERS FROM MANCHESTER IN 1772

Destination	No.	Days of Departure	Destination	No.	Days of Departure
London	6	5, Wed. Sat. 1, Tu.	Lancaster	1	Mon. Fri.
Birmingham	1	Fri.	Leeds	1	Tu. Th. Sat.
Bolton	2	Tu. Th. Sat.	Liverpool	1	Tu. Th. Sat.
Bristol	1	Wed.	Macclesfield	1	Tu. Th. Sat.
Burnley	2	Tu. Th. Sat.	Newcastle-on-Tyne	1	Th.
Bury	1	Tu. Th. Sat.	Northwich	2	Tu. Th. Sat.
Cambridge	1	Th.	Nottingham	2	1, Th. 1, Sat.
Chester	2	1, Tu. Th. Sat. 1, Th.	Pontefract	1	Sat.
Chorley	1	Tu. Th. Sat.	Preston	1	Mon. Fri.
Chowbent	1	Tu. Th. Sat.	Rochdale	2	Tu. Th. Sat.
Colne	1	Fri.	Salop	1	Sat.
Derby	1	Th.	Sheffield	2	1, Th. 1, Fri.
Doncaster	1	Sat.	Stockport	2	Every day
Halifax	2	1, Tu. Th. Sat. 1, Mon. Th.	Wakefield	1	Tu. Th. Sat.
Huddersfield	1	Mon. Th. Sat.	Wigan	2	Tu. Th. Sat.
			York	1	Sat.

One stage-coach ran to London, and one to Liverpool, each on three days of the week.

On the Old Navigation between Manchester and Liverpool 21 vessels were engaged. On the New Navigation between Manchester and Warrington 9 vessels were engaged, also a number of open vessels called Tuns, and between Warrington and Liverpool 11 vessels were engaged. A 40 Tun Boat sailed between Manchester and Altrincham three days a week, and coal boats arrived in Manchester from Worsley every day.

CHAPTER III

THE COMING OF MACHINERY: KAY TO ARKWRIGHT

I

THE statement made at the close of the last chapter, that a new cotton manufacture arose in Lancashire in the latter years of the eighteenth century is justified, notwithstanding the fact that goods made entirely of cotton had undoubtedly been manufactured in the county before, possibly to a larger extent than there is positive evidence to show. From 1770 the cotton industry, as it is now known, began its growth, and this event must always be attributed in large measure to the inventions associated with the names of James Hargreaves, Richard Arkwright, and Samuel Crompton. Their inventions represent a culmination of a series of endeavours to improve the processes of cotton manufacture which reach back to the thirties of the eighteenth century —the time, it may be noticed, when the "Manchester Act" was secured. Generally these endeavours had reference to spinning and the processes preparatory to it, but it was in weaving that the first invention appeared which attained much success.

At this time, in the Manchester district, there were two types of loom in use, the "Dutch" loom and the ordinary hand-loom. The first was introduced, apparently about the beginning of the century, for narrow fabrics of which it could weave several at once.[1] In this loom the shuttle was sent through the warp by the action of cog-wheels, which was a slow and cumbrous process, and unsuitable for the weaving of wider fabrics.[2] In the ordinary hand-loom, the shuttle was sent to and fro through the warp

[1] *Ante*, p. 40.

[2] Chapman, *ibid.*, p. 21.

by hand. The invention referred to was that of the "flying shuttle" by Kay, of Bury, for which he took out a patent in 1733.[1] This invention, which was for use in the ordinary hand-loom, consisted mainly of a "picking-peg" contrivance, by means of which the weaver could jerk the shuttle through the warp, using only one hand.[2]

Although exceedingly simple, the invention, when combined with other improvements, was of great importance, as it enabled the weaver to work more quickly, with a less expenditure of effort, and weave a width of cloth which had required two weavers before. For some reason, the invention does not appear to have been used much in the cotton industry for about thirty years after its appearance, although it was used in the Yorkshire woollen industry, regardless of the claims of the inventor.[3] Besides his invention of the "flying shuttle," Kay effected a considerable improvement in the reeds for looms, and in 1745 took out a patent for a power-loom, and also applied his ingenuity to carding and spinning, but in these latter efforts he apparently attained little success.[4] In 1760 his son Robert effected another improvement in the loom by his invention of the "drop-box," which enabled the weaver "to use any one of three shuttles, each containing a different coloured weft, without the trouble of taking them from and replacing them in the lathe."[5] In 1764 the elder Kay made an appeal to the Society of Arts for recognition of his work, and claimed to have many more inventions that he had not put forward, owing, as he said, to the treatment he had received from those engaged in the cotton and woollen industries, and from Parliament.

[1] John Kay was born near Bury in 1704, but lived at Colchester at the time of the invention. He returned to Bury some time after 1745, and lived there apparently until about 1753 (Espinasse, *Lancashire Worthies* (1874), pp. 310-318).

[2] Ogden, *ibid.* (1783), p. 89., states that "the fly shuttle" is "in such estimation here (in Manchester) as to be used generally even on narrow goods."

[3] Guest, *ibid.*, p. 9. Espinasse, *ibid.*, p. 313.

[4] Espinasse, *ibid.*, pp. 310-318.

[5] Guest, *ibid.*, p. 9.

The story of his difficulties, of his emigration to France, and of his death there, is so well known as not to require repetition.[1]

The inventions of the flying shuttle and the drop-box, with the introduction of Dutch looms, were the most important developments in weaving in the first part of the eighteenth century. But there was another development which should be noticed, referred to by Ogden, which, he states, gave rise to a new and important branch of trade in the Manchester district. Owing to the greater variety of patterns attempted in figured goods, a more complicated loom became necessary, as well as the employment of a boy to manipulate the treadles for the raising and lowering of the warps which was required in the weaving of such goods. The goods produced were consequently known by the name of "draw-boys." But the complicated loom was also more expensive, and it is significant that, at this time, weavers were having "looms mounted for them at great expense which the employers advanced." [2]

With this progress in weaving, and with an expanding market, it was inevitable that efforts would be made to effect improvements in the methods of preparing the raw material, and in spinning. In 1736, before the Committee of the House of Commons which reported in favour of the petition to allow printed fustians to be freely manufactured, the statement was made that four spinners were required to supply one weaver with material, and all the authorities substantiate the statement and emphasise the difficulties which existed owing to the discrepancy.[3]

At the beginning of the eighteenth century, in this country, the only thing that could be called a machine used in the operations necessary in transforming raw cotton into yarn was the spinning-wheel. One or other

[1] Espinasse, *ibid.*

[2] Ogden, *ibid.*, pp. 76-77. This loom was the predecessor of the Jacquard loom. Chapman, *ibid.*, pp. 22-23.

[3] *Ante*, p. 23. Ogden, *ibid.*, p. 87. Guest, *ibid.*, pp. 11-12.

of two wheels was commonly used for cotton-spinning: the "Jersey" wheel or the "Brunswick" wheel, the latter differing from the former mainly in the fact that it had a treadle, so that it could be worked by the foot. On these wheels only one thread was spun, and the spinning was intermittent with the winding of the spun thread. The "Saxony" wheel was an improvement upon these, but was most commonly used for flax and wool spinning. With this wheel there was a contrivance known as a "Flier" which enabled the processes of spinning and winding to proceed simultaneously, and sometimes two spindles were attached to it, the spinner thus forming a thread with each hand. The "Saxony" wheel, however, was not so suitable for cotton-spinning as the others.[1]

The cotton, before spinning, was cleaned by hand or, at most, by lightly beating it with a cane, while the carding operation was performed by means of hand-cards.[2] These cards were little more than two brushes with wire bristles, the cotton being placed on one brush, and by the other being drawn over it, the fibres were straightened out ready for the next process. Some progress was made in carding by increasing the surface of the cards, making one a fixture, and hanging the other round a pulley with a weight to balance it. Thus the workman was left with the task of moving this card to and fro over the cotton on the fixed card as required. These cards were known as stock-cards as distinguished from the hand-cards.[3]

[1] Kennedy, *Brief Memoir of Samuel Crompton*, Manchester Literary and Philosophical Society, vol. v., Second Series (1831), p. 324. *Souvenir of Royal Visit to Bolton*, 10th July 1913, pp. 12, 13. The sections on cotton-spinning, and on early cotton machinery, were written by Mr. Thomas Midgley, Curator of Chadwick Museum, Bolton, and contain a clear exposition of the spinning processes. In the museum there is an excellent collection of the early machinery of Hargreaves, Arkwright, and Crompton, as well as of more ancient machinery.

[2] Dobson, *Evolution of the Spinning Machine* (1911), p. 28.

[3] *Ibid.*, pp. 33-35. Kennedy, *Rise and Progress of the Cotton Trade*, Manchester Literary and Philosophical Society, vol. iii.,

It was particularly to carding and to spinning that the inventors gave their attention, and during more than thirty years before Arkwright took out his first patent numerous efforts were made to discover improved mechanical means of performing the operations. Apart from the invention of the "spinning-jenny," which, though not patented until the year following Arkwright's patent, was in use some years before, the most notable efforts were those of Lewis Paul, whose title to fame is enhanced by his friendship with Dr. Samuel Johnson.[1]

It is now generally accepted that, in the patent taken out by Paul in 1738, the idea of attenuating cotton by rollers was embodied, so that question need not be discussed.[2] Evidently Paul was born in London and died there, but during part of his life he lived in Birmingham, and it appears that the invention was carried through at this place, with the assistance of John Wyatt as workman.[3] Whatever the merits of the invention may have been, it is clear that in the hands of Paul and his friends it did not attain much success. None of them appears to have possessed the push and business instinct of Richard Arkwright, and it may have been to this lack, as much as to lack of inventive genius, that the non-success was due.

Certainly there was faith in the invention, and Paul himself claimed that, in the course of twenty years, he made more than £20,000 out of it as patentee.[4] It

Second Series (1815), pp. 118-119. Mr. Kennedy states that before the coming of the great inventions the endeavours to find better methods filled the cottages with little improvements, and that the multiplication of instruments was forcing the work out of cottages. "Here," he says "commences the factory system" (p. 118).

[1] Cole, *Some Account of Lewis Paul*. Paper read at the meeting of the British Association, 1858. Reproduced by French, *Life and Times of Samuel Crompton* (1859), App. III. The references are to the pages in French's book.

[2] For the contrary view, Ure, *Cotton Manufacture*, i., pp. 237 *et seq*. The proximity of the date of the patent to that of Kay's patent and the "Manchester Act" is a fact again worthy of notice.

[3] French, *ibid*., pp. 269-270. Espinasse, *ibid*., p. 341.

[4] *Ibid*., pp. 256, 268.

was used in at least one factory at London, in one at Birmingham, and in one at Northampton. The machinery at Birmingham was turned by animal-power, and at Northampton by water-power, and at the latter place fifty hands were employed in the factory.[1] It seems evident, however, that, whatever the reason, when the term of the patent expired in 1752 faith in the invention had also largely expired, and Paul attempted to get it introduced into a Foundling Hospital in London.[2] During the next six years he made improvements in the machine, and in 1758 obtained another patent for it, but shortly afterwards he died, and the honour of carrying the use of rollers in spinning to a successful issue was left to others.[3]

But it is not only in connection with spinning that Paul's name has to be remembered. Whatever failings he may have had, he was certainly a man of an inventive turn of mind. It is recorded that in 1742 he granted a licence in consideration of £200, for the right to use a "pinking" machine he had invented.[4] But more important in relation to the cotton industry was his invention of a carding-machine, for which he secured a patent in 1748.[5] Earlier in the same year a man named Daniel Bourne had also taken out a patent for a carding-machine,[6] and after a time the principal processes of the two machines were combined in one machine, though it is to Paul's invention that the most important method of carding the finer qualities of cotton at the present day is traced.[7] Both these machines, however, were lacking in that they had no "doffing" arrangement, which prevented continuous working, but the deficiency in this respect was afterwards removed by Arkwright with his crank and comb

[1] Baines, *ibid.*, p. 134. Espinasse, *ibid.*, pp. 349-350.
[2] French, *ibid.*, p. 266. Espinasse asserts that it was introduced into at least one Yorkshire workhouse (*ibid.*, p. 355).
[3] French, *ibid.*, p. 269. [4] *Ibid.*, p. 252.
[5] *Ibid.*, p. 266. It appears. however, that he may have invented this machine as early as 1740 (*ibid.*, 256).
[6] Espinasse, *ibid.*, p. 365. [7] Dobson, *ibid.*, 36-37.

device, while others improved the imperfect feeding arrangement.[1]

Paul's carding-machine did not find its way into Lancashire until about 1760, when it was introduced by a man named Morris, who lived in the neighbourhood of Wigan.[2] Soon afterwards it was adopted, or one based upon it made, by the founder of the famous Peel family at Blackburn, who, in carrying on his experiments, employed James Hargreaves, best known in connection with the "spinning-jenny." For a long time it was supposed that the credit for the crank and comb was due to Hargreaves, but later it was recognised that it more properly belonged to Arkwright.[3]

By 1760 the need for improvements in spinning had become more than pressing, and this decade marks a period of great activity and great achievements, though, as already suggested, it was not so much a period of new achievements as one in which efforts extending over more than a generation attained success. In 1754 a patent for a spinning-machine had been taken out by a man named Taylor, but it does not appear to have come to anything.[4] In 1761 the Society of Arts issued an advertisement offering rewards "for the best invention of a machine that will spin six threads of wool, flax, hemp, or cotton at one time, and that will require but one person to work and attend it," and several were forthcoming, but apparently none was completely satisfactory. One six-thread machine, however, was examined by the Committee of Manufacturers in 1763 and a reward granted to the person who had presented it.[5]

In the year following the grant of this reward, James Hargreaves is supposed to have conceived the invention of the "spinning-jenny," [6] though it did not become prominent before 1767 and was not patented until 1770.

[1] Dobson, *ibid.*, p. 37.
[2] Kennedy, *Brief Memoir of Samuel Crompton*, p. 326.
[3] Baines, *ibid.*, pp. 177-179. [4] Espinasse, *ibid.*, p. 320.
[5] Brown, *The Basis of Mr. Samuel Crompton's Claims* (reprint, Manchester, 1868), p. 28.
[6] Baines, *ibid.*, p. 156.

In the meantime, Arkwright had brought the method of spinning by rollers to a stage at which he could apply for a patent, which he obtained in 1769. When the two methods of spinning are compared, it may be seen that spinning by rollers was the greater departure from the customary method of spinning cotton.

When cotton has been carded, its transformation into yarn consists in gradually attenuating the cotton and twisting it into a thread. In the eighteenth century, the whole process could be definitely divided into two stages. In the first, the carded cotton was made into a continuous but comparatively thick cord called roving; in the second, the roving was attenuated and spun into yarn. The spinning operation was therefore a continuation of the roving operation, and with the ordinary spinning-wheel both were performed in essentially the same way. In spinning, the roving was attached to the spindle, and the spinner with one hand extended the roving, and with the other turned the wheel, which caused the spindle to revolve, and thus gave the necessary twist to the attenuated roving. When this operation had been performed, the spinner, with one hand, again turned the wheel, the spindle again revolving, this time to wind the yarn upon it, while the other hand was engaged in giving in the yarn for the winding. Clearly this system admitted of only one thread being spun at a time.

In the invention of the "jenny" the action of that hand of the spinner which attenuated the roving and gave in the yarn for winding was mechanically reproduced, but instead of the spinner being able to operate only one spindle, as many could be operated as could be conveniently introduced. The bobbins round which the rovings were coiled, and the spindles, were fixed in a frame. The ends of the rovings were attached to the spindles, passing between a clasp arrangement which formed part of a movable carriage. While the clasp was open, the carriage was first drawn out from the spindles until the required length of rovings for spinning

had passed through. Then the clasp was closed, and the rovings, thus gripped, were attenuated by the carriage being drawn further out. Simultaneously, the wheel, which caused the spindles to revolve, was turned to give the required twist to the thread. Then, as the carriage was moved back to its first position, the wheel was again slowly turned, this time to wind the spun thread on the spindles. Thus the action of one hand of the spinner remained the same, but the other was now used in opening and closing the clasp and in moving the carriage to and fro.

From the beginning, the effect of this invention was to multiply many times the amount of yarn that could be spun by a spinner, and the size of the jenny was soon increased. In 1767 it was said to contain eight spindles ; when Hargreaves took out his patent in 1770 the specification mentioned sixteen or more ; in 1784 the number had increased to eighty ; and ultimately as many as one hundred and twenty are said to have been introduced.[1] Although the jenny did not make the rovings, and its movements depended upon hand power, it represented a great advance in spinning, and its mechanism was so simple that it could be worked by children.[2] The thread it produced, however, was not completely satisfactory for the warp in cotton goods, as it was not "capable of giving that hardness of twist and fineness which was necessary to form the threads of the warp."[3]

This defect was supplied by the invention of spinning by rollers patented by Arkwright—the water-frame as it came to be called—as the characteristic feature of the yarn thus spun was its suitability for the warp. The jenny and the water-frame, therefore, were complementary rather than substitutional machines. When the patent for spinning by rollers was taken out in 1769, as with the jenny, it was still intended that the rovings

[1] Espinasse, *ibid.*, pp. 322, 327. [2] Ogden, *ibid.*, p. 87.
[3] Guest, *British Cotton Manufacture* (1828), p. 147. Ogden states that the larger jennies were used for making warps until they were superseded by the water-frame (*ibid.*, p. 91).

should be made on the spinning-wheel. But with Arkwright's method, instead of the rovings being attenuated by a long stretch, the operation was performed by their passing between rollers moving at different velocities, which had the same effect. For the twisting and the winding of the thread the "Flier" spindle mentioned in connection with the "Saxony" wheel was utilised. Consequently, the spinning and winding operations proceeded simultaneously, whereas with the jenny they were intermittent.[1]

Before Arkwright obtained his second patent in 1775, sometimes called the "carding" patent, the roller method had been extended to the rovings, and as he and others had effected the improvements, already mentioned, in the carding machine, the whole of the operations required in transforming the raw cotton into yarn could be performed by machinery.[2]

In the 1769 patent Arkwright provided for the machinery to be driven by horse-power. Two years later he erected his factory at Cromford, where water-power was available. But at this time another power to drive it was in preparation, Watt having taken out his patent for his steam-engine in the same year as Arkwright obtained his first patent.[3] It was not, however, until the last decade of the eighteenth century that Watt's steam-engine was much used in the cotton industry, its first application in this direction being made at Papplewick in Nottinghamshire in 1785, and it was not introduced into Manchester until 1789.[4] There had been earlier efforts to utilise steam, as in 1783 Ogden could state that in Manchester a factory had been erected in which "Mr. Arkwright's machines are setting to work by a steam-engine, for carding and spinning of cotton."[5]

The new spinning machinery was not introduced into

[1] *Souvenir of Royal Visit to Bolton*, pp. 16-17.
[2] Espinasse, *ibid.*, p. 400.
[3] Smiles, *Boulton and Watt* (1904), p. 111.
[4] Ure, *ibid.*, i., p. 286.
[5] Ogden, *ibid.*, p. 16.

use without opposition, but the opposition to its use was small, compared with the opposition to the patents granted in connection with it. Before the patents were taken out, both Hargreaves and Arkwright had left Lancashire for Nottingham. As already mentioned, Hargreaves did not obtain his patent until 1770, and his removal to Nottingham followed upon a machine-breaking episode in 1767, when the jenny was the object of attention. Arkwright removed in the following year, and his machinery appears to have been immune from attack until 1779—ten years after he had obtained his first patent.

In that year a rising took place in north-west Lancashire, when an attack was made upon the factories in the neighbourhood of Chorley, particularly upon one at Birkacre, owned by Arkwright and his partners, and the machinery destroyed. Afterwards the mob intended to proceed to Bolton, Manchester, and Stockport, and finally to reach Cromford, breaking the machinery as they went along.[1] Consequently, it is hardly surprising that the inhabitants of Manchester were alarmed, and called a meeting of magistrates, merchants, and gentlemen, when it was resolved "to embody and arm a sufficient number of soldiers and proper persons to defend the town and neighbourhood."[2] Fortunately their services were not required, as the rising terminated at Bolton. In the next year, one of Arkwright's partners petitioned the House of Commons for redress for the destruction of the factory at Birkacre, claiming that he had suffered loss to the extent of £4400, owing, as he insisted, to lack of protection from the civil and military authorities.[3]

In the references to the risings which took place in Lancashire against machinery, there is usually an implication that they were largely due to the effects of its introduction upon the position of the operatives. Neither

[1] Josiah Wedgwood was an eye-witness of this rising. His account of it is quoted by Espinasse, *ibid.*, pp. 424-426.
[2] *Manchester Mercury*, 12th October 1779.
[3] *J.H.C.*, xxxvii., p. 926.

in 1767, nor in 1779, nor on the other occasions when such risings occurred, is this implication strongly justified. Invariably, a satisfactory explanation requires attention to be paid to conditions prevailing at the time, due to entirely other causes, and at this point a slight digression may be permitted for a glance at the general situation.

II

It is not too much to say that the outbreak of the Seven Years' War in 1756 marks the beginning of a century of unrest in England, in which economic causes have to be regarded as the effects of political causes. No sooner had the Seven Years' War concluded than the conflict with the American colonies began, and was a constantly disturbing factor until long after peace was signed in 1783.[1] Scarcely was there time to recuperate from this conflict, when the Revolutionary and Napoleonic Wars commenced, which left a dreadful aftermath the gathering of which required more than a quarter of a century after the battle of Waterloo. The position attained by the average workman in 1750 was not reached again until the end of this period. The price of food suffered great fluctuations, and at times rose to an enormous height, while remuneration lagged behind, and employment was uncertain.[2] At various times the unrest broke out into open riots, and in these riots resentment against economic changes was an incident.

[1] It will be borne in mind that the trouble with America began immediately the Seven Years' War concluded, with the attempt to impose, with increased energy, "the colonial policy" which at once was met by commercial reprisals that greatly dislocated trade and called forth loud protests from British merchants. Macpherson, *Annals of Commerce* (1805), see under years 1763-1790. Smith, *Wars Between England and America* (1914).

[2] Meredith, *Economic History of England*. See Chart B for variations in the amount of wheat which could be purchased with the daily wage of a carpenter and an agricultural labourer. Tooke, *History of Prices*; Martineau, *History of the Peace*; Wilks, *The Half Century* (1852); J. L. and B. Hammond, *The Village Labourer*; *The Town Labourer*; *The Skilled Labourer*.

Mention has been made earlier of the conditions in the late fifties. These conditions were matched in the sixties, and in the seventies. At the beginning of 1759 the price of wheat had fallen to the neighbourhood of 20s. a load in Manchester, at which it remained until the spring of 1762, when it began to rise again, reaching an average of 25s. 6d. in 1763. In 1764 there was a further increase to more than 30s., which continued through 1765 and into the following year.

With the rise of prices the agitation against forestallers and engrossers revived, and at least one preacher in the Manchester district took as the text of his sermon: "He that withholdeth corn the people shall curse him: but blessing shall be upon the head of him that selleth it,"[1] but more than admonition was considered necessary. In 1762 a riot took place in Manchester in which people from Oldham, Saddleworth, Ashton, etc., joined, which was regarded as so serious that the King offered his pardon to any two persons who would turn informers.[2] Early in 1764 Parliament instituted an inquiry regarding the high price of provisions, when the conclusion was arrived at, that the evil was due to forestallers and engrossers. Apparently, however, it was not easy to find a remedy, as a few months later the King, by the advice of the Privy Council, offered a reward of £100 for the discovery of any unlawful combination to raise prices, and in Derbyshire, the miners, finding wheat at 8s. 4d. a bushel, decided to take matters into their own hands, and fixed a price of 5s., at which they cleared the market.[3]

At the beginning of 1766 Parliament again took action by allowing the import of prohibited cereals, and prohibiting the export of others In September, in answer to the numerous petitions which had been presented, three proclamations were issued: one, which enforced the sixteenth-century laws against forestallers and

[1] *Manchester Mercury*, 9th January 1762.
[2] *Ibid.*, 1st September 1762.
[3] Macpherson, *ibid.*, pp. 391, 406-407.

engrossers; another, which laid an embargo on all vessels loaded with wheat and flour in any port of Great Britain and prohibited distillation from wheat; while another prolonged the embargo and extended it to vessels having on board barley or malt.[1] In November of the same year, an Assize of Bread began to be issued in Manchester, and was continued weekly for some months.[2]

In February, 1767, riots were again reported from Derbyshire, and two months later the Mayor and

[1] Macpherson, *ibid.*, pp. 438, 452.

[2] Regarding this Assize the following notice, based upon 31 Geo. II., c. 29., was issued in *The Manchester Mercury*, 18th Nov. 1766:—"In every Assize of Bread respect shall he had to the Market Price of Grain and Meal and Flour making reasonable allowance to the Baker for his Labour and Profit. In order to know the Price of Meal and Flour in proportion to the Price of Wheat, the Magistrates and Justices of Peace are to take notice that the Peck loaf of each sort of Bread is to weigh, when well baken, 17 lbs. 6 ozs. avoirdupois, and the rest in proportion; and that every sack of Meal or Flour is to weigh 2 cwt. 2 qrs. (not 280 lbs.) and that from every sack of Meal or Flour there ought to be produced 20 such Peck loaves of Bread."

"By this rule from every Manchester load of flour weighing 240 lbs. there ought to be produced 297 lbs. 13 oz. 12 drs., of Bread of each sort well baken. The price of 296 lbs. 7 oz. 8 drs. of Wheaten Bread consisting of 1d. 2d. 6d. 12d. 18d. loaves according to the above Assize is 44s. The Price of a load of Flour is 30s., allowance to Baker is 14s. The Price of 297 lbs. 10 ozs. 15 drs. of Household Bread consisting of such loaves is 32s. 10d. Price of a load of Flour is 27s. 6d. Allowance to Baker is 5s. 4d."

ASSIZE OF BREAD FOR MANCHESTER AND SALFORD
10th NOVEMBER 1766 *

	lbs.	*ozs.*	*drs.*
1d. loaf Wheaten to weigh		8	7
Ditto Household ,, ,,		11	2
2d. loaf Wheaten ,, ,,	1	0	14
Ditto Household ,, ,,	1	6	4
6d. loaf Wheaten ,, ,,	3	2	9
Ditto Household ,, ,,	4	2	12
12d. loaf Wheaten ,, ,,	6	5	2
Ditto Household ,, ,,	8	5	8
18d. loaf Wheaten ,, ,,	9	7	11
Ditto Household ,, ,,	12	8	3

* *Manchester Mercury*, 11th November 1766.

Corporation of Chester were threatened with murder if they did not prevent forestalling. In July, a statement appeared that, although provisions had been imported into the country, food was no cheaper, and with pathetic insistence the cause was still sought in the trading activities of "harpies who prey on the vitals of the public." [1]

During this year an agricultural society came into existence for the Hundred of Salford, and another in Manchester whose activities extended over a radius of twenty miles from the town.[2] Both these societies were exceedingly active for a long period in encouraging improvements by the offer of premiums, and articles on various aspects of agriculture became a common feature in *The Manchester Mercury*. That the distress during these years was widespread is shown by similar accounts to those mentioned, from all parts of England, from Ireland and Scotland, and from the Continent as well.[3]

The rise in the price of food was no doubt an important factor in the distress of this time, but as a fundamental cause it had no more relation to the distress than the manipulations of traders had to the rise. The fundamental cause was to be found in the conditions created by the Seven Years' War and the succeeding trouble with the American colonies and the consequent dislocation of trade. The conclusion of the Seven Years' War was followed by a crisis in which a large number of commercial houses in Amsterdam, Hamburg, and other German towns, came to the ground.[4] "The failures were by some ascribed to the large sums owing by the British and French armies, and by others to the vast quantity of base money issued by the German princes during the war, for which the merchants expected to receive the value, or at least a considerable part of the value it was

[1] *Manchester Mercury*, 10th February, 14th April, 28th July.
[2] *Ibid.*, 1st September 1767. The rules and orders of the Society of Agriculture at Manchester are given, 21st June 1774.
[3] *Ibid.*, in various issues.
[4] *Manchester Mercury*, 6th September 1763.

issued for. It is reasonable to believe that both these causes operated, and that even the peace, by suddenly drawing off the trade enjoyed by those neutral places during the war might be instrumental in producing a derangement in the affairs of those concerned it it." [1] Owing to the action of the authorities in issuing something of the nature of a "moratorium" in favour of the merchants, and to the assistance of the "Lombard houses," in Amsterdam and Hamburg, the acute period of the crisis does not appear to have been of long duration. To assist the recovery, British merchants were obliged to extend their credits to their correspondents, and to send them remittances, and in turn they were supported by the Bank of England.[2] In these circumstances it is not surprising that on account of the failures trade on the Continent was said to be at a stand.[3] The conditions in England are sufficiently indicated by what has been said, and by the petitions presented to the House of Commons complaining of high food prices and of the decay of trade.[4]

With the passing of the crisis, conditions might have improved but for the trouble with the American colonies, which hampered trade more than almost anything else could have done. This was inevitable owing to the character of the trade with these colonies. The northern colonies imported much from Great Britain, but exported little directly to this country. The imports were paid for by the colonies exporting to the West Indies and to the Continent, and by their carrying trade. Thus a check to American trade dislocated the circle of commerce and imposed a check all round.[5] The trade was so important that

[1] Macpherson, *ibid.*, pp. 372-373. [2] *Ibid.*
[3] *Manchester Mercury*, 13th September 1763.
[4] Macpherson, *ibid.* iii., pp. 406-407.
[5] *Ibid.*, pp. 396-397. "This trade united all the advantages which the wisest and most philanthropic philosopher, or the most enlightened legislator, could wish to derive from commerce. It gave bread to the industrious in North America by carrying off their lumber, which must otherwise rot on their hands, and

during a considerable part of the period over which the trouble extended it was carried on regardless of prohibitions, which, rather than lessening the volume of the trade, checked its expansion, and increased its uncertainty.[1] When the position was more serious, as in the months intervening between the passing of the Stamp Act in 1765 and its repeal in the following year, Parliament was belaboured with petitions from the trading and manufacturing towns, in which attention was drawn to the character of the trade, to the derangement caused by its stoppage, and to the effect upon the working population already in a state of rebellion owing to the high cost of living.[2]

Such were the general conditions when the jenny was introduced into the cotton manufacture, and, in the circumstances, the attack made upon it is not difficult to understand. A riotous and destructive spirit was abroad, engendered by the conditions of the time. To smash a machine, which apparently would reduce the demand for labour, must have appeared to a disinterested spectator almost as a praiseworthy act.

When the attack was made upon Arkwright's machines in 1779, the conflict with America and its consequences still dominated the situation. In a petition of cotton spinners in and adjoining the county of Lancaster, presented to the House of Commons in April, 1780, and in the evidence given before a Committee of the House two months later, the position was described in

their fish, great part of which without it would be absolutely unsaleable, together with their spare produce and stock of every kind; it furnished the West India planters with those articles without which the operations of their plantations must be at a stand; and it produced a fund for employing a great number of industrious manufacturers in Great Britain; thus taking off the superfluities, providing for the necessities, and promoting the happiness of all concerned." *Cf.* Bryan Edwards, *History of the West Indies*, Book IV., ch. iv. (1801 edition). Pitman, *The Development of the British West Indies* (1917), pp. 212, 256-257, 271-273, 320, 360, also the charts (pp. 244, 264), showing the balance of trade between the West Indies and England.

[1] Macpherson, *ibid.*, p. 589.

[2] *Ibid.*, pp. 442-443.

detail.[1] In the petition it was stated that before the beginning of the dispute with the American colonies the cotton manufacture in Lancashire had employed thousands of men, women and children, but of late years it had much decreased, and the workpeople were destitute of employment and in extreme distress. When Spain entered the war, exports to that country and to its dependencies had been prohibited; trade to the West Indies and Africa had been checked; and British ships had been excluded from the Mediterranean ports.

In addition to the stoppage of trade from these causes, an evil of great magnitude had arisen in the cotton industry through the introduction of patent machines and engines, which, with the other events, threatened the workpeople with total loss of employment, and had reduced them to despair. It was owing to these facts that, in the preceding September, several thousands had assembled and demolished one of the largest patent machines and a number of smaller ones, and in order to appease them, the magistrates, inhabitants, and manufacturers of Wigan had held a public meeting, and had engaged to lay their grievances before Parliament. In the meantime the use of the machines and engines worked by water and horses for the carding, roving, and spinning of cotton had been suspended. Still further, it was claimed that the goods thus produced were inferior to those produced by hand, and this, it was feared, would diminish trade still more, as the reduction of price was not equal to the difference of quality. Moreover, the machines were a monopoly for the advantage of patentees and proprietors, to the loss and detriment of the public, and Parliament therefore was asked to grant relief.

Evidently this petition was an *ex parte* statement, in which the antagonism to Arkwright's patent of others besides workpeople engaged in the cotton trade found expression. Shortly afterwards a counter-petition was presented by the agent for cotton manufacturers in the town and neighbourhood of Manchester,

[1] *J.H.C.*, xxxvii., pp. 804, 925-926.

in which it was insisted that, if the previous petition received favourable consideration, evil consequences would follow, as the patent machines and engines would be used in the cotton manufacture abroad.[1]

At this juncture, the questions at issue were considered by the above-mentioned Committee of the House, and in the evidence the assertions of the first petition were repeated, with additions. Referring to the stock hand-cards which had been in use before the patent machines were introduced, it was claimed that they not only performed better work, but that they found more employment, as it required nine persons working by hand to do as much as one with a patent machine. From the evidence, it appears that by 1780, although the larger jennies were still regarded with disfavour, the jennies containing twenty-four spindles had come into favour, and were set against the patent machines to show that they were not required, particularly as there were many looms unemployed, and as people were generally out of work in winter. Possibly the reason for the partiality shown to the smaller jennies was contained in the assertion that they were in the hands of the poor. As regards remuneration, it was stated that sixteen years before, a woman with a single spindle could earn 10d. to 15d. a day, but then only 3d. to 5d.; those on jennies of twenty-four spindles could earn 8s. to 9s. a week, but then, only 4s. to 6s.

As may be expected, this evidence was not accepted without question by witnesses on the other side, although some of it was not altogether controverted. It has to be recognised that the first effect of the introduction of the new spinning machinery was not to improve the position of the spinners so much as that of the weavers, and just as one side stressed the case of the spinners, the other stressed the case of the weavers. It was, therefore, admitted that the earnings of spinners had varied of late years, and that in the preceding year a spinner with a single spindle could earn only about 3d.

[1] *J.H.C.*, xxxvii., p. 882.

or 4d. a day, but it was claimed that by working on the jenny, at the time the evidence was given, 2s. to 2s. 6d. a day could be earned. Further, the argument of the opposing witnesses that the Poor Rates had increased was admitted, but this increase, it was asserted, was due to various causes unconnected with machinery.

More positively, it was stated that during the preceding ten years the cotton manufacture had doubled, that the number of looms had trebled, that the wages of weavers had increased, and that if more looms existed they could be employed.[1] Owing to the introduction of the patent machines by which cotton warps could be produced at a lower price, a calico manufacture had been established and the manufacture of quiltings improved, and without the machines it would be impossible to meet the demand for these warps. The complaint regarding quality was altogether repudiated ; on the contrary, the opposite was strongly affirmed, and a great expansion was anticipated, as the patent cotton warp had been found to answer as well as linen warp for many goods other than those for which it was then used.

The evidence in favour of the patent machines so impressed the Committee that the gist of it was embodied in a series of resolutions, and agreed to by the House without opposition—indeed there was no other reasonable course. The evils complained of in the first petition were due to the use of the patent machines only in a small degree ; they were much more the social consequence of the conflict proceeding at the time.

[1] A fustian-weaver was said to be able to earn 1s. to 2s. a day. Fustian-weavers appear always to have been a poorly paid class. Cf. *Report on State of Children Employed in Manufactories* (1816), p. 99, Evidence of Mr. George Gould : "In the fustian trade I think there never was a period when a good hand could get above thirteen or fourteen shillings."

CHAPTER IV

THE OPPOSITION TO THE PATENTS

The episodes of 1767 and 1779 were the two most important direct attempts to obstruct the use of the new spinning machinery, and there is no reason to think that they were in any degree effective.[1] As already mentioned, more important opposition was directed against the patents granted to Hargreaves and Arkwright, and this came from those who wished to use the machinery without complying with the rights the patents conferred. Any opposition of this class to its use was secondary to their opposition to the patents, and as the patent of Hargreaves was never upheld, the machine to which it referred was always freely used.

As regards Arkwright's machinery, the nearest approach to obstruction of its use took the form, first, of refusing to use the yarn made by it, which led Arkwright and his partners to utilise it themselves in making cotton calicoes, thus giving rise to a new branch of manufacture; and secondly, when it was found that this manufacture was hampered by the Acts passed in 1714 and 1721, by opposing their efforts in 1774 to secure modification of the Acts.[2] By the 1714 Act, calicoes had been made subject to an additional excise duty of 3d., making 6d.

[1] An attack was made on the first Robert Peel's machinery when he lived at Peel Fold near Blackburn. "Mr. Peel was accustomed to say that the destruction of his machinery by the populace was a very fortunate occurrence for him, inasmuch as he was forced thereby to adopt Arkwright's machinery, which otherwise he never should have done, he having a strong and not unnatural affection for his own inventions" (Wheeler, *History of Manchester* (1824), p. 519).

[2] Arkwright's *Case*, p. 99. The *Case* is quoted in Arkwright's *Patent Trial*, 25th June 1785.

in all, and by the 1721 Act the wear or use of printed calicoes had been prohibited. The 1736 Act, it will be remembered, had modified the 1721 Act only in so far as goods made with a linen warp were concerned. The modifications requested by Arkwright and his partners were the removal of the additional duty, and of the prohibition, and as their efforts were successful, goods made wholly of cotton, even though printed, were henceforth on the same footing as mixed goods.[1]

The patent granted to Hargreaves was opposed immediately it was obtained. Arkwright was more fortunate in his patents, although they were certainly infringed. It was not until 1781, however—twelve years after the grant of his first patent, and six years after the grant of his second—that he began a series of actions for infringements.

Hargreaves' patent "for the more expeditious spinning, drawing, and twisting cotton" was dated 12th July 1770.[2] On 17th July 1770, and for some weeks following, a notice appeared in *The Manchester Mercury* from James Hargravs (*sic.*) & Co., informing the public of the fact, and offering a reward of ten guineas for information as to "Persons who shall make, use, or vend, or in any ways imitate the said machines or engines." On 25th September another notice appeared, drawing attention to the one from Hargreaves, and pointing out that "there are several and various sorts of wheel-machines or engines made and used in and about the Town of Manchester for the more expeditious spinning, drawing, and twisting of cotton" and inviting manufacturers and others concerned in these operations to a meeting at the Bull's Head Inn, on 2nd October, "to consider of several matters relating to, and concerning the advertisement and the machines above mentioned."

What happened at this meeting it is impossible definitely to say. Baines' account of the matter is that Hargreaves "Finding that several of the Lancashire

[1] 14 Geo. III., c. 72; also *infra*, p. 197.
[2] Espinasse, *ibid.*, p. 325.

manufacturers were using the jenny . . . gave notice of actions against them: the manufacturers met, and sent a delegate to Nottingham, who offered Hargreaves £3000 for permission to use the machine; but he at first demanded £7000, and at last stood out for £4000. The negotiations being broken off, the actions proceeded; but before they came to trial, Hargreaves' attorney (Mr Evans) was informed that his client, before leaving Lancashire, had sold some jennies to obtain clothing for his children (of whom he had six or seven); and in consequence of this, which was true, the attorney gave up the actions in despair of obtaining a verdict." [1]

This account was based upon information obtained in Nottingham nearly seventy years after the event, the informant, apparently, being the son of Hargreaves' partner, then in his eighty-third year.[2] The account may be correct, and it is impossible definitely to disprove it, but, from the tone of the notice calling the meeting in Manchester on 2nd October, it seems hardly credible that an offer of the kind mentioned would be made at that time, neither is it likely from the general attitude of the manufacturers to patentees that it would be made at any other time. Some months later, however, another notice appeared calling a meeting of manufacturers of cotton, again at the Bull's Head Inn, to consider "special affairs" relating to their trade.[3] But, at this meeting, it is extremely probable that the "special affairs" had reference not to Hargreaves but to the famous Thomas Highs, who at this time had left Leigh for Manchester, and who, according to Guest, was the original inventor both of the spinning-jenny and of the method of spinning by rollers patented by Arkwright.[4]

In a well-known passage Guest states that in addition to his other achievements Highs "constructed what may be termed a double jenny," which "was publicly

[1] Baines, *ibid.*, p. 162. [2] *Ibid.*
[3] *Manchester Mercury*, 18th June 1771.
[4] Guest, *British Cotton Manufacture*, pp. 94, 198.

worked in Manchester Exchange in 1772 . . . and the manufacturers on that occasion subscribed 200 guineas, and presented them to Highs as a reward for his ingenuity."[1] As a matter of fact, the exhibition took place in 1771 and was advertised in *The Manchester Mercury* in the following terms:—"Mr. Hayes's new invented machine for Spinning Cotton is now fix'd up in the Exchange where all persons concerned in the Manufacturing of Cotton will have an opportunity of viewing it."[2]

This notice appeared on 2nd July, two weeks after the notice calling the meeting just referred to, and the connection between the two notices seems fairly clear. It is a reasonable assumption that the "special affairs" discussed at the meeting were the question of purchasing the machine of Highs, which may well have been, as Guest suggests, an extension of the principle of the jenny then in use, for there can be little doubt that the jenny was widely in use at this time.[3] Evidently something was known of it before Hargreaves left Lancashire, and if it is true that he had also mounted and sold some

[1] Guest, *British Cotton Manufacture*, p. 203.

[2] *Ibid.*, p. 203. It will be noticed that in this reference, as in others of the time, the name of the inventor is given as Hayes. I have used the name Highs in the text as he has become best known to posterity by that name. Guest states that it is written Highs in the parish register (*ibid.*, p. 18).

[3] According to Ogden, who, it will be remembered, published his *Description of Manchester* in 1783, the aim of Highs' machine was to produce a yarn suitable for warps. After referring to the introduction of the jenny and the risings against it, which called forth an address from Dorning Rasbotham, a magistrate who lived near Bolton, in which he urged that it would be to the interest of the workpeople to encourage jennies, Ogden proceeds: "This seasonable address produced a general acquiescence in the use of these engines, to a certain number of spindles, but they were soon multiplied to three or four times the quantity; nor did the invention of ingenious mechanics rest here, for the demand for twist for warps was greater as weft grew plenty, therefore engines were soon constructed for this purpose: one in particular was purchased at a price which was a considerable reward for the contriver's ingenuity, and exposed at the Exchange, where he spun on it, and all that were disposed to see the operation were admitted gratis" (pp. 90-91).

jennies, it is probable that by 1770 it was well known, and that it was included among the "machines and engines made and used about the town of Manchester" mentioned in the notice calling the meeting shortly after he obtained his patent. If such was the case, the opposition to the patent and Hargreaves' failure to uphold it can be easily understood.

But, as already mentioned, Guest claims that the original machine was not the invention of Hargreaves, but the invention of Thomas Highs, and that Hargreaves' relation to it was that he added a considerable improvement. The evidence put forward by Guest on behalf of Highs rests mainly on statements made by old men sixty years after the event, and considerable suspicion of such evidence is excusable particularly when it has been elicited by an ardent man out to establish a case.[1] Moreover, it is a remarkable fact that no one—not even Highs himself—appears openly to have put forward the claim until Guest published his first book in 1823, although the controversy over Arkwright's patents, in which Highs figured so prominently, afforded many opportunities.

Yet, notwithstanding these difficulties, it is not easy to put aside as baseless all the evidence adduced by Guest in support of his case. That Highs was a man with an extraordinary aptitude for invention is undoubted, and it is not improbable, in the activity to discover improved methods of spinning in the sixties of the eighteenth century, that he did experiment with a machine at least similar to the jenny. At the same time, it is scarcely less probable that others did likewise.[2] As already pointed out, the jenny reproduced mechanically the hand operations necessary in spinning with the wheel, and a machine of the character of the jenny was

[1] Guest, *History of the Cotton Manufacture*, pp. 13-14, 53-54, also *British Cotton Manufacture*.

[2] "Ce que Hargreaves trouva, beaucoup d'autres l'avaient cherché en même temps que lui. . . . C'est ainsi que Hargreaves put être accusé de n'être pas le premier ou le seul auteur de son invention" (Mantoux, *La Révolution au XVIII^e Siècle*, p. 210).

the obvious line of advance. Although Highs was a man in whose mind the idea of the jenny was likely to originate, it is impossible, on the evidence, to say that it did so. What does seem clear is, that it was in association with Hargreaves that the jenny became a practicable machine, although when it left his hands it was not a perfect machine and quickly underwent improvements.[1] Nevertheless, it had made possible the spinning of weft with a facility before unknown, and it maintained its position in the cotton industry for a long period, when it was largely superseded by the "mule."

Probably, as M. Mantoux suggests,[2] Hargreaves did not at first realise the importance of what had been achieved, which would explain his tardy application for a patent. Doubtless the application in 1770 was induced by the increasing use of the jenny, and by the fact that Arkwright had been sufficiently enterprising to obtain a patent for his machinery in the preceding year. That Hargreaves was unfortunate in his patent need not be questioned, but it is some satisfaction to know, on the authority of Baines and others,[3] that in his business at Nottingham, where he and his partner, Thomas James, are claimed to have established the first cotton-mill in the world,[4] he was at least moderately successful.

Whatever Hargreaves' success may have been, there can be no question of the success attained by Richard Arkwright. That Arkwright was a great inventor may be disputed, but that he was a great man of business it is impossible to deny. It may be stated with some confidence that, had his name not been associated with the invention of machinery, he would have gained a

[1] Guest, *British Cotton Manufacture*, p. 195.

[2] *Ibid.*, p. 211.

[3] Baines, *ibid.*, pp. 162-163. Abram, *History of Blackburn*, 205-206. Baines mentions that Hargreaves' widow received £400 as her husband's share in his business. Abram adds the information that Hargreaves left property of the estimated value of £4000, but states that about the middle of the nineteenth century two of his daughters were living in poverty in Manchester and that a subscription was raised with difficulty on their behalf.

[4] Wylie and Briscoe, *History of Nottingham*, p. 101.

prominent place in the early stages of modern industry. All that is known of his career supports the view. It was pre-eminently this characteristic which distinguished him from his less fortunate contemporaries. Whether the idea of spinning by rollers was his own or not, it is clear that when he left Preston for Nottingham in 1768, he realised that he had in his possession an invention which, with the aid of capital, would bring him material success, and he was able to convince others of the fact. His association with Samuel Need and Jedediah Strutt [1] —particularly with the latter—was the tactical point in his career in the cotton industry. Strutt, by previous inventions, had already shown his ability as a mechanician [2]; he was also an established business man and a capitalist, able to realise the possibilities of Arkwright's machinery. In every respect he was an ideal partner for Arkwright, and there can be little doubt that, if all the facts were known, much of the improvement of the machinery would have to be ascribed to him: the recorded instance of his rubbing the spinning rollers with chalk to prevent the cotton sticking to them is significant.[3]

With Arkwright thus established, with his machinery with its potentialities, in the very district where silk-mills—the precursors of cotton-mills—had begun to arise more than a generation before,[4] the modern cotton

[1] Baines, *ibid.*, p. 151.

[2] Felkin, *History of the Machine-Wrought Hosiery and Lace Manufactures* (1867), p. 90.

[3] *Ibid.*

[4] Smiles, *Industry and Invention* (1884), ch. iv., "John Lombe: Introducer of the Silk Industry into England."

The number of workpeople employed by one concern in the silk industry, many years before the appearance of the factory in the cotton industry, is, perhaps, not always realised. In the sixties of the eighteenth century, the silk manufacturers in various parts of the country petitioned the House of Commons regarding the decline of their trade, and in the evidence on the petition some interesting figures were given. One silk-throwster asserted that he had employed as many as 1500 workpeople at a time: 500 in London, 200 in Gloucester, 400 in Dorset, and 400 in Cheshire. Of this number about 1400 were women and children, and 100 men. A Spitalfields throwster asserted that, in 1760, he employed 400 workpeople, but the most striking figures were

industry organised on the lines of the factory system was inevitably born. It should be borne in mind that in the twelve years during which the privileges of the patents were enjoyed Arkwright and his partners did

given in two sets of tables relating to certain firms in London and Macclesfield :

STATE OF SEVERAL SILK-THROWSTERS IN LONDON AND MACCLESFIELD IN THE YEARS 1761, 1762, 1763, 1764

LONDON

Men, women and children employed by	1761	1762	1763	1764
Spragg, Hopkins, and White	..	800	700	300
John Graham	500	350	240	120
John Powell	..	400	300	170
Triquett and Bunney	300	300	200	130
Sam Nicolls	300	300	200	150

MACCLESFIELD

Men, women and children employed by	1761	1762	1763	1764
Philip Clows	720	690	540	370
Glover and Co.	400	400	300	180
Bradock and Hall	360	360	260	20
Langford, Robinson and Co.	350	350	280	180
Bradburn and Gosling	271	200	110	30
Swain and Gosling	229	190	123	35
W. Hall	140	120	90	70

As regards Macclesfield, it was stated that, in addition to the above, there were not less than twelve silk-mills of inferior note in the town which in 1761-1762 employed 1000 hands or thereabouts. The machines used were called "mills" and the numbers employed by each of the above Macclesfield concerns were given—*e.g.* Philip Clows had 20, 19, 16, and 10 pairs employed in the years 1761, 1762, 1763, and 1764 (*J.H.C.*, xxx., pp. 208-219). See *infra*, p. 197.

not merely hold the patents and draw premiums from them. In 1771 they erected their factory at Cromford in which, eight years later, three hundred workpeople were said to be employed. This was followed in 1773 by another at Derby, erected for the specific purpose of carrying on the new manufacture of calico. In 1776 another factory was erected at Belper; about the same time the one at Birkacre was established; and in 1780 the one at Manchester was erected, which was said to have cost £4000, and to be sufficiently large to contain six hundred workpeople.[1]

In 1782 it was estimated by Arkwright and his partners that they had £30,000 embodied in factories, while licences for the use of the patent machinery had been issued to "adventurers" in the counties of Derby, Leicester, Nottingham, Worcester, Stafford, York, Hertford and Lancaster, in connection with which these men had invested at least £60,000. Altogether, at this time, it was claimed, the cotton industry thus organised employed "upwards of five thousand persons, and a capital on the whole of not less than £200,000."[2] According to Arkwright's statement, "it was not till upwards of five years had elapsed after obtaining his first patent, and more than £12,000 had been expended in machinery and buildings, that any profit accrued to himself and partners."[3] This date would roughly coincide with the Act they obtained relating to the manufacture and sale of calicoes, and with the grant of the second patent.

Witness to the progress that was being made after this date is borne by the infringements of the patents, which led to the institution of nine actions by Arkwright, only one of which came to trial in 1781. It is quite certain that privileges such as Arkwright enjoyed were not viewed with favour in Manchester. Since February, 1774, a Committee for the Protection of Trade had existed in the town, and continued to exist until July, 1781,

[1] Mantoux, *ibid.*, pp. 217-221. Espinasse, *ibid.*, pp. 392, 413, 420.

[2] *Trial*, 25th June 1785, pp. 99, 102. [3] *Ibid*, p. 99.

when it was succeeded by another, representative of the Cotton and Linen, the Silk, and the Smallware Manufacturers of Manchester and District.[1]

Judging from the frequent notices published in the newspapers by the first committee, its activities seem to have largely consisted in keeping the inhabitants of the town on tenterhooks regarding the presence of foreigners, who had come for the purpose of carrying away trade secrets, and who, apparently, adopted the most dramatic methods to discover them. However, the committee was interested in other matters, among which was the question of patents. In 1776 a notice appeared warning the public against infringing a patent which had been granted to a man named Wolstenholme, for the manufacture of cotton velveteen. Before very long the committee also issued a notice expressing the opinion that the invention to which the patent referred was not new, and that any person might safely manufacture the cloth without being liable to damages.[2] There can be little doubt as to the side on which the sympathies of Manchester manufacturers lay when Arkwright instituted his actions in 1781.

In February of that year a notice appeared [3] drawing attention to the fact that Arkwright had served several persons in Manchester and neighbourhood with writs

[1] *Manchester Mercury*, 8th March 1774; 17th July 1781. This second committee consisted of sixteen members, ten for cotton and linen, and three each for silk and smallware. A cotton manufactures company also came into existence in Manchester about October, 1774, which finally closed its accounts in November, 1778. This company apparently existed for the purpose of buying cotton in large quantities and then disposing of it to those who would sign an agreement to purchase from the company for six months. It seems to have arisen out of an agitation against the cotton dealers in Manchester (*ibid.* 20th September, 4th October, 22nd November, 1774; 10th November 1778, and many other dates. *Cf.* the Feltmakers' Project in the seventeenth century described by Unwin, *Industrial Organisation in the XVIth and XVIIth Centuries*, pp. 156-164).

[2] *Ibid.*, 21st May, 24th September 1776.

[3] *Ibid.*, 27th February.

for infringing one or both of his patents, and inviting those concerned to attend a meeting. In the following month [1] another meeting was called of merchants, manufacturers, and others, interested in the cotton trade of the town and neighbourhood, to consider the most effectual means of obtaining free and general use of the engines and inventions for the manufacturing of cotton, and for opposing attempts to obtain a monopoly. The leader in this movement was Mr. Robert Peel, later Sir Robert Peel, the father of the statesman, who, at the time, was building up even a greater concern than Arkwright's, and to whom a revocation of the patents meant much.[2] To meet the expense of the ensuing legal proceedings a subscription was raised, twenty-two firms subscribing at the rate of 1s. a spindle employed by them.[3]

The action tried in 1781, in which a Colonel Morduant was the defendant, had reference to the infringement of the 1775 patent—the carding patent. The defence put forward was that the specification relating to it was insufficient, and on this ground the verdict went against Arkwright.[4] In the following year he drew up his *Case*, in which he admitted the obscurity of the specification, but claimed that his object was to prevent the introduction of his machines into other countries.[5] The main point of the *Case*, however, was the request it contained. Arkwright's second patent had been declared invalid, and normally the term of the first patent would expire in July, 1783. He now requested Parliament, as a reward for the services he had rendered to the country, to consolidate the two patents, and to allow them to run for the remainder of the normal term of the second patent—until the end of 1789.[6] This request, if granted, would have preserved to him the second

[1] *Manchester Mercury*, 20th March.
[2] Wheeler, *History of Manchester* (1842), p. 521.
[3] *Ibid.*, pp. 521-522, where the names of the firms are given.
[4] Espinasse, *ibid.*, pp. 428-431.
[5] *Trial*, 25th June 1785, p. 100.
[6] *Ibid.*, p. 102. *J.H.C.*, xxxviii., p. 687.

patent for its normal term, and have extended the life of his first patent for six and a half years.

Immediately the Committee of Trade in Manchester summoned the manufacturers to oppose the request, and a petition against it was presented to Parliament.[1] It is evident that there was a determination that neither Arkwright nor anyone else should have a patent if it could be prevented, for about the same time we find the Committee deciding to raise £200 for a man named Milne, who had invented a machine to expedite cotton roving, with a proviso that, if more than that sum were raised, the surplus should be devoted to opposing Arkwright's application.[2] It is not unlikely that Arkwright pressed his case upon Parliament in the months immediately preceding the expiration of his first patent in 1783, for at this time the Committee of Trade called another meeting in order to oppose him.[3] With this continued opposition from the centre most interested, and with foreign affairs absorbing so much of the attention of ministers, it is hardly surprising that Parliament took no action.

For a period of two years the matter lay in abeyance, except that Arkwright, whose partnership with the Strutts had now been dissolved,[4] collected evidence to prove that the specification of his 1775 patent was sufficient for the construction of his machinery. On the strength of this evidence he then instituted another action for its infringement, which came to trial in February, 1785.[5] Certainly the action could not have been instituted at a more appropriate time for catching the Manchester manufacturers with their hands full of other things. In August, 1784, the Bill had been introduced levying the "fustian tax," which roused a tremendous agitation in the town that continued until the

[1] *Manchester Mercury*, 12th February 1782. *J.H.C.*, xxxviii., p. 865.
[2] *Manchester Mercury*, 16th April 1782.
[3] *Ibid.*, 11th February 1783. [4] Espinasse, *ibid.*, p. 431.
[5] Arkwright *versus* Nightingale. Espinasse, *ibid.*, pp. 435-437.

Bill for its repeal was introduced eight months later.[1] Also, just before the trial, the Irish commercial propositions had passed the Irish Parliament, and to these the Manchester manufacturers were vehemently opposed, and none more so than Robert Peel, who, in his evidence before the Committee considering the question, claimed at the time to employ 6800 workpeople, and to pay an annual excise of £20,000. If the propositions were accepted, he asserted, it would pay him to transfer his operations to Ireland, where from the cheapness of labour, and exemption from taxes, he would retain a superiority of thirteen per cent.[2]

The fact that Arkwright caught the Manchester manufacturers at a busy moment may have had a bearing upon the result of the trial, which, it is probable, was different from what they anticipated. The question at issue was the sufficiency of the specification of the 1775 patent, and they do not appear to have been prepared to offer evidence regarding the originality of Arkwright as the inventor, as they apparently were at the first trial,[3] and as they decidedly were at the third. Arkwright put forward witnesses, including James Watt, to prove that machines could be made, and that they actually had been made, from his specification, and so gained the verdict.[4]

[1] *Ante*, p. 63.

[2] *Manchester Mercury*, 22nd March 1785.

[3] Espinasse, *ibid.*, p. 429.

[4] It appears that Watt had a personal interest in the matter. Writing to Matthew Boulton after Arkwright had been nonsuited in 1781, he stated: "Though I do not love Arkwright, I don't like the precedent of setting aside patents through default of specification. I fear for our own. . . . I begin to have little faith in patents; for according to the enterprising genius of the present age, no man can have a profitable patent but it will be pecked at." And a few days later: "I am tired of making improvements which by some quirk or wresting of the law may be taken from us as I think has been done in the case of Arkwright, who has been condemned merely because he did not specify quite clearly. This was injustice, because it is plain that he has given this trade a being—has brought his invention into use and made it of great public utility. Wherefore he deserved all the money he has got. In my opinion his patent

If the assertion ever was made that there was collusion between the plaintiff and the defendant to secure a verdict for the former,[1] it was probably made in Manchester.[2] In any case, there can be no doubt of the sensation the result of the trial created in the town. Notwithstanding the anxiety about other matters, a vigorous campaign was at once commenced to reverse it. Complaint was made of Arkwright's claim having been allowed to lie dormant for so long. Relying on the validity of the verdict in the first trial, a great number of works had been completed, and others were nearing completion, which would employ thousands of poor, and which represented a capital outlay of more than £200,000. Unless relief were obtained, a great number of individuals who had embarked their all would be ruined, and would depart to other countries. Moreover, it was insisted, it was not only those using Arkwright's spinning machinery who were involved, but also those using the jenny, for they would be deprived of the use of the carding machinery. By the verdict, "this great manufactory, the envy of Europe, will in great degree lie at the mercy of one man, who has already received by far, greater emoluments than any

should not have been invalidated without it had clearly appeared that he did not invent the things in question. I fear we shall be served with the same sauce *for the good of the public* ! and in that case I shall certainly do what he threatens. This you may be assured of, that we are as much envied here as he is in Manchester, and all the bells in Cornwall would be rung at our overthrow" (Letters dated 30th July and 13th August 1781. Smiles, *Boulton and Watt* (1904 Edition), p. 274).

[1] Espinasse, *ibid.*, p. 436.

[2] Was it *generally* known in Manchester that an action was pending or were the manufacturers over-confident? So far as newspaper notices were concerned, the activity which preceded the first and the third trials was absent. Two days before the action was tried *The Manchester Mercury*, which could not be accused of favour to Arkwright, contained the following paragraph: "Rd. Arkwright, Esq., has established a Sunday school at Cromford, in Derbyshire, which already consists of two hundred children. Pleasing it is to the friends of humanity, when power like his is so happily united with the will to do good !" (15th February 1785).

other individual, or united body of discoverers ever did." [1]

The greatest fear was expressed that the cotton industry would move to Ireland and Scotland, where, it was asserted, Arkwright's machinery was working without restriction. In so far as Arkwright had power to prevent it, this was extremely unlikely, but apparently there was something in the statement that in conjunction with "several eminent merchants" he was preparing to establish large works in Scotland. It was about this time that he came into contact with David Dale, and played some part in the erection of the famous New Lanark Mills, where, fifteen years later, the famous Manchester cotton-spinner, Robert Owen, "entered upon the government." [2]

There can be no doubt that the reversal of the verdict of the 1781 trial had created a difficult situation, and a writ was at once applied for, to test the validity of the 1775 patent, and the trial took place in June, 1785, little more than four months after the second trial. This time the attack was made not merely on the ground of the insufficiency of the specification, but also on the ground that the roving operation patented in 1775 was simply a repetition of the spinning operation patented in 1769, for which the patent had expired. But, in addition, the claim of Arkwright to be the inventor of the spinning machinery for which he had enjoyed a patent for its full term was disputed, and the same as regards the carding machinery included in the 1775 patent.

The second point may be dismissed without discussion. Undoubtedly the spinning and the roving operations were essentially the same; the application of the rollers to carded cotton to produce roving was a repetition of their application to roving to produce yarn. Moreover, the question whether the new application was sufficient to justify an extension of the patent was secondary to

[1] *Manchester Mercury*, 1st March 1785.
[2] *Ibid.* Espinasse, *ibid.*, 449 *et seq.* Robert Owen, *Autobiography*, i., p. 56.

the question whether Arkwright could be regarded as the inventor of the rollers. As regards the carding machinery part of the patent, damaging evidence was given by the widow and son of Hargreaves, and by a workman formerly employed by him, who stated emphatically that Hargreaves was the inventor of the crank and comb device, which was an immensely important part of the carding machinery, while others claimed either to have invented or used this, and other parts of the carding machinery, before Arkwright obtained his patent.[1]

At the trial Arkwright was unable to produce much evidence to rebut that given against him, though he claimed to be able to do so shortly afterwards, particularly as regards his invention of the crank and comb,[2] and apparently in this matter he had a strong case. Before Baines finished his *History of the Cotton Manufacture* he was quite convinced, by information obtained from the son of Hargreaves' partner at Nottingham, that, though Hargreaves' relatives might have spoken in good faith at the trial, instead of the crank and comb having reached Arkwright from Hargreaves, as was implied, the case was exactly the opposite.[3] Assuming that the information obtained by Baines was correct, it must be recognised that Arkwright was unfortunate, as there can be little doubt that the evidence given regarding the crank and comb must have influenced the view taken of his claim to have been the inventor of the spinning rollers.[4]

In the effort to refute the claim of Arkwright as the inventor, the important witnesses were Thomas Highs

[1] *Trial*, 25th June 1785. Evidence of Elizabeth Hargreaves, George Hargreaves, and others regarding the crank and comb. On other points John Lees, Henry Marsland, Thomas Hall, and the partners Pilkington and Wood.

[2] Espinasse, *ibid.*, p. 447. [3] Baines, *ibid.*, pp. 177-179.

[4] Actually the leading counsel against Arkwright in the third trial asserted that the crank and comb device so impressed the jury in the second trial as to gain Arkwright the verdict on that occasion (*Trial*, 25th June 1785, p. 19).

and John Kay. The story has been often told and need not be repeated at length. Briefly stated, Highs was put forward as the real inventor, and Kay as the person from whom Arkwright obtained information of the invention, which he patented in 1769. For some years before 1766 Highs and Kay had lived at Leigh as neighbours, and, according to Guest, in 1763 or 1764 the latter assisted the former in his efforts, already referred to, to construct the spinning-jenny.[1] About 1766 apparently, Highs conceived the idea of spinning by rollers, at any rate, in his evidence, he claimed to have made them in the following year. Kay, by this time, had gone to live at Warrington, where he followed the trade of clockmaking, and Highs employed him to make the wheels necessary to give different velocities to the rollers, and also a model.[2] Another remarkable claim of Highs was that, at this time, he used the rollers not only to spin but to rove as well, which Arkwright did not publicly claim to do until 1775. According to his own statement, however, he did not proceed with the rollers beyond the experimental stage, owing, as he said, to his inability through poverty, nor did he mention the invention for fear of losing it.

In the meantime, Arkwright, who lived at Bolton, is supposed to have heard of Highs' experiments and to have sought out Kay with the object of obtaining knowledge of them. In his evidence, Kay stated that Arkwright visited him at Warrington in 1767, and that he made two models of Highs' method of rollers for Arkwright, who took them away. Shortly afterwards he accompanied Arkwright to Preston (where the machinery was brought to a practicable stage), then to Nottingham, remaining in Arkwright's employment some four or five years. At the end of this time trouble arose between them and they parted more or less as enemies.[3]

[1] Guest. *History of Cotton Manufacture*, pp. 13, 53. The question of the jenny was not dealt with at the trial, of course.
[2] *Trial*, 25th June 1785, Highs' evidence.
[3] *Ibid.*, Kay's evidence.

Apart from a statement of Highs that Kay's wife told him of what had passed between her husband and Arkwright, there is only Kay's testimony, which was not always convincing, to go upon, and clearly under the circumstances he was not likely to err in Arkwright's favour. On the other hand, it is incredible that the two could have been associated as they were without Highs' experiments having been mentioned, assuming that he had carried on any experiments. In view of the statements of Highs, this can hardly be doubted: there is nothing to suggest that he was deliberately untruthful. At the same time, this does not prove that Arkwright had not conceived the idea of spinning by rollers before his contact with Kay at Warrington. The difficult point to explain is why Arkwright sought out Kay at all, coupled with the fact that, from this time, he devoted his whole activity to the construction of the spinning-machine. The statement that previously he had been experimenting in mechanics, and that he sought out Kay for some purpose thus connected, does nothing but leave the difficulty unsolved.

The only other scrap of evidence regarding the question as to whether Arkwright did obtain Highs' invention, was contained in a reference of Highs to a conversation he had with Arkwright at Manchester, when he charged him with having obtained it. Arkwright's attitude, on this occasion, as described by Highs, was, however, as appropriate to a man with a clear conscience, who had no desire to enter into an unpleasant argument, as to a man who was guilty and wished to evade a charge.[1] One point that may be noticed is that as this conversation was said to have taken place about the time when Highs' machine was exhibited in the Exchange, the date of the exhibition, as revealed by its advertisement, fixes the conversation one year nearer to the time when

[1] *Trial*, 25th June 1785, Highs' evidence. Evidently Arkwright made a gesture of impatience, and suggested that even if Highs had any claim to the invention, he had not gone forward with it, and, in such a case, another man had the right to do so.

Arkwright took out his first patent than has always been supposed. On the side of Highs, the great difficulty is to explain why his claim was allowed to lie so long in abeyance, seeing that he was not without friends in Manchester, men, moreover, who, it may be assumed, would not have been slow to attack Arkwright's patent had the slightest opportunity been offered.

On the evidence given at the third trial, not only as regards the invention of the rollers, but as regards the other questions at issue, no other decision was possible than one that involved the annulment of Arkwright's patent, and it was arrived at without hesitation. It does not necessarily follow that the evidence was complete, and on one point, as already noticed, it probably was not. In an application for a new trial, made shortly afterwards, evidence regarding the crank and comb, similar to that obtained by Baines, and from the same source, was mentioned, and also evidence to rebut that given by Kay and Highs. The judges, however, were convinced that there was not sufficient ground for the application and in November, 1785, the patent was cancelled.[1]

After the trial, *The Manchester Mercury*, in a comment on the evidence, stated that it appeared from it, that the most material engines in Arkwright's patent for preparing cotton were the cylinder carding-engine and the roving-engine. The first was so old that its origin could not be traced, and improvements had been added to it by Hargreaves, Whittaker, Wood and others, long before Arkwright claimed it. The roving-engine and the spinning-engine were one and the same thing, and the evidence proved that it was invented by Mr. Hayes of Leigh, although Arkwright had enjoyed a monopoly of it for fourteen years, while the real inventor was prevented by poverty from seeking redress.[2]

There is some truth in this view, but certainly not the whole truth. It must be recognised that neither Highs nor Arkwright was the first to conceive the principle of attenuating cotton by the roller-method. That

[1] Espinasse, *ibid.*, pp. 447-448. [2] 5th July 1785.

honour undoubtedly belongs to Lewis Paul, and the principle was crudely stated in the specification [1] of the patent he obtained, and embodied in the machinery he constructed, thirty years before either of them had begun to experiment. But how far were these men or either of them indebted to Paul for knowledge of the method? Taking into account the lives and the characters of the two men, Arkwright was more likely to have been acquainted with it than Highs. In his peregrinations about the country he had the opportunity, and with his unbounded push and curiosity it is fairly certain that, if anything could be known of it, Arkwright was the man to know it. Indeed, if Kay's account of the conversation he had with Arkwright at Warrington may be trusted, he went far to avow the fact.[2]

It cannot be said, of course, that Highs had not heard of the method, but in his case it was less likely and, as mentioned in connection with the jenny, he was just the type of man in whose mind ideas were likely to originate anew.[3] About Arkwright there was not the same suggestion of originality. He was just the type of man, however, who, having got an inkling of Paul's method, and then gaining a knowledge of Highs' experiments through Kay, would carry the roller method to a practicable issue. Whether the idea was his own, or whether he was carrying the work of Paul, or Highs, or both, it is certain that it was with Arkwright that the method of spinning by rollers came into use, and of the carding machinery, for which again, as we have seen, some credit was due to Paul, the same may be said.

In certain respects Arkwright was undoubtedly a great man. He became prominent when ideas of invention were fermenting in men's minds, and even if all that was affirmed at the third trial of the obligations he owed to

[1] Baines, *ibid.*, pp. 122-123.

[2] *Trial*, 25th June 1785, Kay's evidence.

[3] In addition to his relation to the machines mentioned in the text Guest asserts that Highs effected some improvement in the carding-machine (*British Cotton Manufacture*, p. 204).

others were true, somehow, in his hands, their achievements were carried a long step towards perfection, and were collated into a successful system. From the early cotton industry, against great odds, he gained wealth; perhaps that was his supreme aim; even so, what he gained was a trifle compared with the pecuniary value of his achievements. On the whole, perhaps it was just as well that Arkwright's career as patentee concluded when it did. As we have seen, by 1780 he had several concerns under his control; also, in 1785, he had great schemes on hand in Scotland. Baines informs us that "he contemplated entering into the most extensive mercantile transactions, and buying up all the cotton in the world, in order to make an enormous profit by the monopoly."[1] Had Arkwright maintained his position for a little longer, his name might have been handed down to posterity, not only in connection with the invention of spinning by rollers, and with the early factory system, but also as the earliest of the great modern Trust magnates.

[1] *History of the Cotton Manufacture*, p. 196.

CHAPTER V

THE MULE AND THE RISE OF A NEW COTTON MANUFACTURE

I

To combine in a superior spinning-machine, the most important principles of those with which the names of James Hargreaves and Richard Arkwright are associated, is the task accomplished by Samuel Crompton. This machine was the "mule," and whatever doubt there may be as to the real inventor of the jenny and the rollers, no serious doubt has ever been cast upon the title of Crompton as the inventor of the mule. In the letters printed in the following pages he informs us how, where, why, and when he invented the machine, and some indication is given of its effects upon the development of a new cotton manufacture. In addition, we have a vivid account of his efforts, and of the measures taken, to obtain adequate recompense for his ingenuity as inventor. The letters are so complete in themselves that, in many respects, little needs to be added to them. But after a lapse of one hundred and forty years from the date when Crompton began to invent his machine, it should be possible to place it more adequately in its relations than it was when the letters were written.

To give a detailed account of Crompton's life and labours is not required, as that task has been excellently performed by his fellow-townsman, Gilbert J. French, and also by his staunch friend, John Kennedy.[1] But,

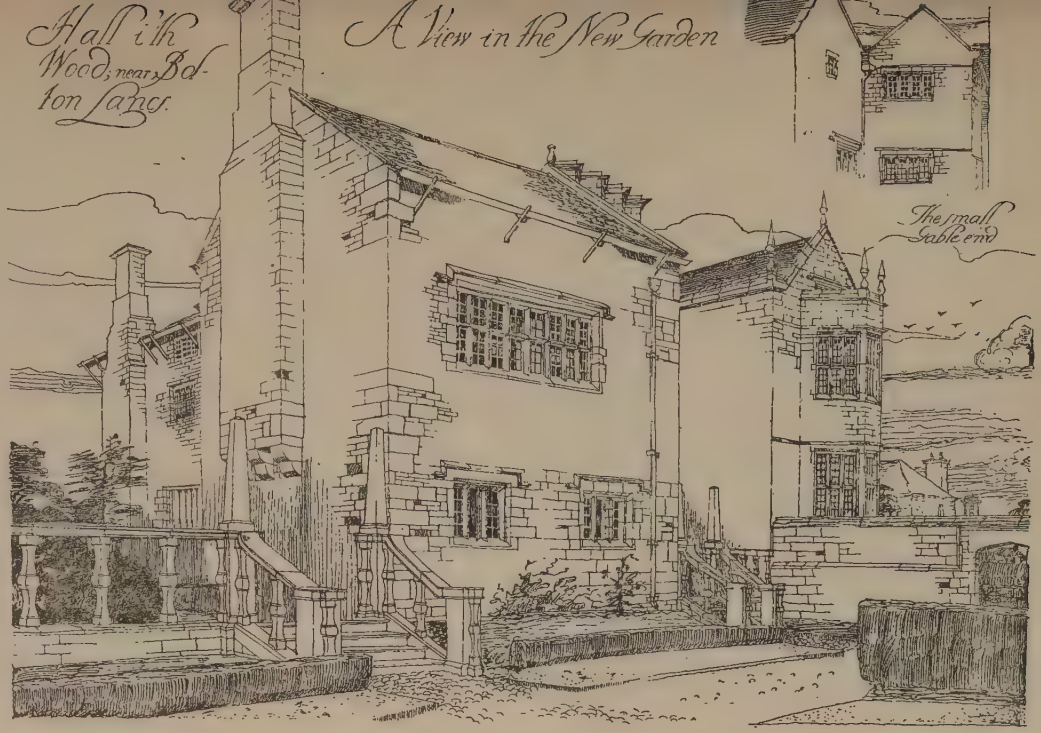
[1] French, *The Life and Times of Samuel Crompton*, first edition, 1859. The references which follow are to this edition. Kennedy, *A Brief Memoir of Samuel Crompton*, Manchester Literary and Philosophical Society, vol. v., second series, 1831.

in association with these letters, to give some of the outstanding facts of his career will be considered excusable and even necessary.

When Crompton was born, on the 3rd of December 1753, his parents lived at Firwood Fold, a hamlet in the township of Tonge, in the parish of Bolton, but about a mile outside the town. Soon after his birth they removed to another cottage in the same township, and, when he was about five years old, they took up their residence in a portion of a large picturesque dwelling near by, which Lancashire folk call Hall-i'-th'-Wood.[1] It was here where, according to his own account, as early as 1772, he began his endeavours to discover a method of producing a better quality of yarn than that which he as a weaver had to use.[2] This was two years after Hargreaves had taken out his belated patent for the jenny, and three years after Arkwright had obtained his patent for the rollers. Two or three years before 1772, Crompton is stated to have spun upon a jenny,[3] and, if the statement is correct, it substantiates the view already expressed, that before Hargreaves took out his patent the jenny was in common use.

It was not until 1778, however, that Crompton began to construct the machine, which, known at first by the names of the "Hall-i'-th' Wood Wheel" and the "Muslin Wheel," later became known as the "Mule." The machine was completed in 1779, and until the beginning of 1780 he spun upon it both warp and weft yarn for his own use as a weaver.[4] At this time he devoted himself entirely to spinning, as well he might, seeing that he obtained as much as 14s. per lb. for 40's yarn, and as much as 25s. for 60's.[5] These prices indicate the intense demand for yarn of the quality spun by his method. They also explain why during 1780 he "was beset on every side by people of various descriptions from the distance of 60 miles and upwards as well as by my

[1] French, *ibid.*, pp. 2, 26-27.
[2] *Infra.*, p. 167.
[3] Kennedy, *ibid.*, p. 319.
[4] *Infra.*, p. 167.
[5] French, *ibid.*, p. 76.



From "The Hall i' th' Wood," Bolton

A Portfolio of Measured Drawings issued by the Manchester School of Architecture

neighbours" anxious to learn his secret.[1] Before the end of the year, convinced that he could not retain it, he consented to make his machine public, on the promise of a liberal subscription, "and received by subscription only so much as built me a new one with 4 spindles more than my first,"[2] which had 48.[3]

The obvious question which suggests itself is, why did not Crompton patent his machine? Some light may be thrown upon this question by considering what was its relation to the jenny on the one hand, and to Arkwright's machinery on the other, for which, it must be remembered, Arkwright was in possession of full patent rights until 1781. Even the verdict of that year did not legally terminate the rights conferred by his first patent, which continued until 1783. The two bases of Crompton's "mule" were undoubtedly the principle of the jenny and the principle of the rollers, hence the name. If proof were required that neither the jenny nor Arkwright's machine produced a completely satisfactory thread for fine work, the demand for Crompton's yarn in 1780 would supply it. But there was the further consideration that the jenny produced a soft thread which

[1] *Infra*, p. 168. Accepting a view held by Crompton's descendants that Arkwright paid a surreptitious visit to Crompton intent upon discovering his secret, French (*ibid.*, pp. 79-80), referring to a passage similar to the above in one of Crompton's letters, suggests that in it there is a hidden reference to Arkwright as "Cromford, where Arkwright then resided, is about sixty miles from Bolton." May not the proverb, "Give a dog a bad name . . ." do something to explain some of the statements made regarding this man?

[2] *Ibid.*

[3] Letter addressed to Sir Joseph Banks, 30th October 1807. Brown, *The Basis of Mr. Samuel Crompton's Claims*, p. 24. In the agreement on which the machine was made public fifty-five individuals and firms promised to subscribe £1, 1s. each, twenty-seven 10s. 6d., one 7s. 6d. and one 5s. The agreement concluded with a statement that "a contribution is desired from every well-wisher of the trade." It is said that some of those included in the list did not subscribe, and, according to Mr. Kennedy's account, Crompton, at this time, received only about £50. In the evidence before the Committee on Crompton's petition in 1812, the amount was stated as £106. Brown, *ibid.*, pp. 24, 31. French, *ibid.*, pp. 84, 271 272. *Infra.*, p. 187.

was only really suitable for wefts, while the characteristic feature of the thread spun by Arkwright's machinery was that it was hard and suitable for warps.

One of the defects of Arkwright's yarn was that it tended to be uneven, and with the rollers there was no satisfactory method of correcting it, though Arkwright attempted to do so by passing the rovings through several machines before they reached the final stage. But the yarn lacked the "stretch" which was given to it by means of the movable carriage which, as we have seen, was an essential feature of the mechanism of the jenny. Crompton's method was to pass the roving between rollers and then, by availing himself of the movable carriage, to get the "stretch." Thus he obtained the advantages of both methods, and the result was a thread of much better quality and finer than that produced previously, and it was not only suitable for wefts, but also for warps, particularly for those required in the manufacture of fine cotton fabrics.[1]

But the mule was more than a combination of the jenny and the rollers; although this in itself was an important development in spinning. As just mentioned, with the mule method of spinning, the roving was first passed between rollers and so partly attenuated. When the required length had passed between them, they stopped, and thus acted like the clasp arrangement on the movable carriage of the jenny. But whereas, in the jenny, the spindles were fixed in the frame, in the mule they were fixed in the movable carriage, which receded from the rollers as the partly attenuated roving was given out, and continued to recede when the rollers stopped, thus attenuating it still more, while at the same time the spindles were revolved to give the required twist to the thread. Then, as in the jenny, the carriage was moved back to its first position, and the spindles were again revolved to wind the spun thread on to them. The important thing about the "stretch" in the machine

[1] *Souvenir of Royal Visit to Bolton*, pp. 20-21. Baines, *ibid.*, p. 197-199.

invented by Crompton was that he "made the spindles recede from the rollers in such a way that the yarn was subjected to the least possible strain until it had been strengthened by twisting or spinning. As a result the yarn produced by the 'mule' was more even and smooth, and could be spun thinner or of higher 'counts' than had been possible on any earlier machines."[1]

If ever the labours of anyone have deserved the grant of a patent, surely it was so in the case of Crompton. Even though his machine was based upon the jenny and the rollers, it marked an immense advance in the development of spinning machinery. Usually it is surmised that he did not obtain a patent owing to lack of funds. Probably it was much more due to his lack of the business qualities which Arkwright possessed in abundance, coupled with difficulties connected with the character of the machine, and with the views regarding patents prevalent at the time.

French refers to the fact that, before the machine was made public, Crompton had shown it in confidence to Mr. John Pilkington, a merchant and manufacturer of Bolton, who gave evidence on his behalf before the Committee in 1812, and finds it difficult to explain why he did not advise Crompton to secure a patent and assist him in doing so.[2] As regards Mr. Pilkington, it is almost certain that his action is to be explained on the ground of the prevalent dislike to patents. Apparently, what he advised Crompton to do, was to make his machine public on the understanding that a subscription should be raised to reward him for its invention.[3] In giving this advice, he was acting quite in accordance with the method of reward which then generally commended itself, and, there is reason to think, commended itself to Mr. Pilkington. Reference has already been made to the Committee of Trade in Manchester, which came into

[1] *Souvenir of Royal Visit to Bolton*, p. 21.
[2] French, *ibid.*, p. 83.
[3] Evidence of Mr. Pilkington in 1812, *infra*, pp. 186-187.

existence in 1781,[1] on the dissolution of the committee which had existed since 1774. Whether Mr. Pilkington was a member of the Committee before 1781 it is impossible to say, but he was certainly a member of the Committee appointed in that year, and it was this Committee which was so prominent in opposition to Arkwright's patent, and which, as we have seen, when it was most actively engaged in this direction, raised a subscription to reward an inventor.[2]

As regards that part of the explanation connected with the character of the mule, it has to be borne in mind that its use involved the use of the rollers, for which Arkwright already held a patent. Only by some arrangement with him could the mule have been openly brought into use, and it is hard to believe that this fact was not recognised, and, seeing that such an arrangement would probably have been in Arkwright's interest, that it did not influence Mr. Pilkington's advice.

In 1807 a writer insisted upon the relation between the mule and the rollers and claimed that, at first, the mule was not used publicly without Arkwright's permission.[3] Evidence that such permission was given in any case is difficult to discover, but apart from it, the statement of Ure that had not Arkwright's patent been annulled, the mule, as embodying the system of rollers, must have remained in abeyance until the end of its term, seems justified.[4] Unless the view is taken that the verdict in the 1781 trial annulled the patent of 1769 (which was never claimed), this means that the mule could not be freely used until 1783, notwithstanding that verdict, and, as the 1775 patent contained the system of rollers, it would come under legal restriction again during the short period that intervened between the second and third trials in 1785.

[1] *Manchester Mercury*, 17th July 1781. Mr. Pilkington was a member of the cotton and linen section.

[2] *Ante*, p. 103. The case of Highs in 1771 must be borne in mind and also another one later, referred to *infra*, p. 123.

[3] *Manchester Athenæum*, No. 9, 1st September 1807.

[4] Ure, *ibid.*, i., p. 277.

But this suggests another point: is it not probable that the appearance of the mule does much to explain the infringements of Arkwright's patent against which he instituted the actions in 1781? Similarly, does it not do much to explain the energy with which the actions were defended, particularly in view of the fact that Peel's firm was included among those that subscribed £1, 1s. in order that Crompton would give publicity to his machine? Unless some arrangement had been made, Arkwright would have every inducement to prevent the mule coming into use; on the other side, an opportunity was presented of outwitting Arkwright, and of securing the free use of a machine even superior to that for which he held a patent. Here, it appears, we get the elements of the trouble which culminated in the trial of 1781.

Whatever justification there may have been for the opposition to Arkwright's patent, the action of those engaged in the cotton industry in regard to Crompton in 1780 was despicable. An inhabitant of Bolton writing in 1799 stated that "the inventor received from the subscription of individuals 100l. for making his invention public; the sum of 200l. he says was promised him, which promise was never fulfilled." [1] It may have been that Crompton did give his consent on the promise of such a sum: a similar sum was given to Highs in 1771 and suggested for the man Milne in 1782, and may have been regarded as customary.[2] Be this as it may, Crompton did not obtain it in 1780, and his treatment at that time must always remain as a reproach to those concerned.

By nature Crompton was probably a man of rather

[1] *Monthly Magazine*, vol. viii., p. 776.

[2] *Ante*, p. 103. This is not to suggest that if Crompton had received £200 he would have been adequately recompensed. What sum would have been adequate recompense? No one, in 1780, could have fully realised the importance of invention as only the future could reveal it. Had the subscription been considerably larger Crompton's grievance might have been lessened though not averted.

gloomy temperament. He would probably have been as happy as was possible to him, with a modest competence, living his life in a corner, but there can be little doubt that this incident accentuated what nature had endowed him with, and he brooded over the injustice to the end of his life. Moreover, it is probable that it checked the exercise of his inventive genius. Four or five years later he was experimenting with a carding-machine,[1] which, French tells us, he ultimately destroyed in the belief that it would be purloined.[2] In view of the date of the experiment one cannot help wondering whether it was carried on during the short period in 1785, when Arkwright's patent rights were temporarily restored, and had as its object the displacement of his carding machinery.

By the time these patent rights were finally annulled considerable improvements had been effected in the mule, and from about that date there followed a great extension of its use. Up to 1783 Mr. Kennedy did not think that Crompton's machine was in use to the extent of a thousand spindles,[3] and it must be recognised that it was in a crude state of construction when it left his hands. Crompton was not a practical mechanic and his work was performed with the simplest tools. He was acquainted with the jenny, but he informed Mr. Kennedy that, when he constructed his machine, he was unacquainted with Arkwright's rollers.[4] This may have meant, not that he had not heard of them, but that he had not seen them at work, which is not improbable, seeing that, at that time, they were only in use by Arkwright himself, and by those who had purchased the right to use them. If Crompton had neither heard of them nor seen them, it appears that he would have to be regarded as another discoverer of the roller method.

[1] Kennedy, *ibid.*, p. 321. [2] French, *ibid.*, p. 67.

[3] Kennedy, *ibid.*, p. 330. In 1788 the writer of a pamphlet estimated that there were at work 550 mule machines of ninety spindles each, and 20,070 hand-jennies of eighty spindles. Aikin, *Manchester*, p. 179.

[4] Kennedy, *ibid.*, p. 326.

The evidence is too slight, however, to allow a confident assertion on this point. Mr. Kennedy's statement that Crompton at first used a single pair of rollers, expecting to attenuate the roving by pressure, and on the failure of this method was led to adopt a second pair, one pair revolving at a higher speed than the other, certainly suggests that he had no previous close acquaintance with the roller method.[1] Indeed, one having heard of it, but not having seen it, might well have proceeded on these lines.

II

Like the jenny and unlike the water-frame, the mule in its early stages was entirely worked by hand, and was chiefly used in the cottages in country districts.[2] The method of spinning by it soon became well known "from the circumstance of the high wages that could be obtained by those working on it, above the ordinary wages of other artisans, such as shoemakers, joiners, hat-makers, &c. who on that account left their previous employment. . . . By their industry, skill, and economy, these men first becoming proprietors of perhaps a single mule, and persevering in habits so intimately connected with success, were afterwards the most extensive spinners in the trade." [3]

It was also by such men that many minor improvements were effected in the mule: "For in the course of their working the machine if there was any little thing out of gear, each workman endeavoured to fill up the deficiency with some expedient suggested by his former trade; the smith suggested a piece of iron, the shoemaker a welt of leather, &c., all of which had a good effect in improving the machine. Each put what he

[1] Kennedy, *ibid.*, 325. Arkwright claimed that he got his first hint of the use of rollers for spinning by seeing a red-hot iron bar elongated by them. Ure, *ibid.*, i., p. 271.

[2] Kennedy, *Rise and Progress of the Cotton Trade*, Manchester Literary and Philosophical Society, vol. iii., second series (1815), p. 127.

[3] Kennedy, *Brief Memoir*, p. 335.

thought best to the experiment, and that which was good was retained. . . . It would be vain to enumerate all the little additions to Crompton's original machine; also as they arose so much out of one another, it is impossible to give to every claimant, what is exactly his due for improvements." [1]

But there were more conspicuous improvements effected in the mule during the first six or seven years after it was made public, and among them were those of Henry Stones of Horwich, who, it is believed, was the first maker of mules after Crompton, either for his own use or for the use of others. His improvements consisted in the introduction of metal rollers, in place of wooden ones, and of a self-acting contrivance to stop them when they had given out the required length of roving, while various devices came into use for measuring the number of revolutions necessary for this purpose. One effect of the improvements of Stones was to allow the mule to be enlarged to 100 or 130 spindles.[2] Soon afterwards a man named Baker of Bury introduced other improvements which enabled the whole machine to be further enlarged, and another man, Hargreaves of Toddington (Tottington near Bury ?), contrived a method for bringing out the carriage.[3]

But, in addition to improvements, there was also a development in connection with the mule in these early years. This was the invention of a machine called the "Billy" by a man at Stockport who, it may be noticed, again received a premium as a reward for his ingenuity.[4] Up to this time the mule had been used solely for the spinning of yarn. The rovings for spinning had to be made either on the spinning-wheel, or by Arkwright's machinery. The "Billy" was a modification of the mule, or rather a combination of the mule and the jenny; but, instead of spinning rovings into yarn, it made the carded cotton into rovings. With this machine rovings could be made for the use of the mule, the jenny, or even

[1] Kennedy, *Brief Memoir*, pp. 335-336.
[2] *Ibid.*, pp. 332-333.
[3] *Ibid.*, 333-334.
[4] *Ibid.*, p. 331.

the water-frame, to any required degree of fineness, and at a greatly reduced cost.[1] This modification of the mule, therefore, extended its own use, but it was not so with the jenny, although it was the jenny-spinners who subscribed the premium for the inventor.

At this time the jenny had superseded the hand-wheel and was in use over a wide area, including such centres as Blackburn, Bury, Oldham, Ashton, and Stockport, but the stage had been reached when in turn, so far as cotton-spinning was concerned, the jenny was to be superseded by the mule.[2] To a lesser extent the same may be said of the mule in relation to the water-frame. The mule, however, was pre-eminently a machine for spinning the finer counts of yarn ; it was owing to this fact that it gave rise to new branches of trade ; in spinning warp yarn and the coarser counts generally there was still scope for Arkwright's spinning-machine. The mule and the jenny were rivals in a way, and to an extent that the mule and the water-frame were not.[3] Even this rivalry was absent as between the mule and Arkwright's machinery for the processes preparatory to spinning, and with the cancellation of his patent roving-making for a time became a distinct business. This was exceedingly important to the small spinners, to whom the rovings were chiefly sold, as they now got the advantage of methods of preparation previously confined to mill-owners who had adopted the patent machinery.[4]

[1] Kennedy, *ibid.*, pp. 331-332.

[2] *Ibid.*, p. 330. According to Guest, at the time he wrote (1828) the jenny was used in the woollen industry even more extensively than ever it had been in the cotton industry (*British Cotton Manufacture*, p. 147).

[3] Baines, *ibid.*, p. 198. Evidence of Mr. G. A. Lee before the Committee on Crompton's petition. *Infra.*, p. 188.

[4] Kennedy, *ibid.*, p. 336.

Autobiography of Robert Owen, i., pp. 25-26 : "My three spinners were spinning the cotton yarn on my three mules from *rovings*. I had no machinery to make rovings, and was obliged to purchase them,—they were the half-made materials to be spun into thread. I had become acquainted with two industrious Scotchmen, of the names of M'Connel and Kennedy, who had

In 1790 William Kelly, manager of New Lanark Mills before Robert Owen came into possession, first applied water-power to the mule, and this at once led to its further enlargement.[1] Taking advantage of the greater driving power available, a Manchester machine-maker named Wright constructed a double mule, which gradually superseded the single mule. With this new construction, which contained about 400 spindles, "the spinner could superintend and operate upon four times the quantity of spindles compared with the former method."[2]

The application of water-power did not mean, of course, that afterwards all the operations of the mule were mechanically performed, but, in 1792, Kelly took out a patent for a "self-actor" mule, which he expected young people would be able to operate. In later years the reason he put forward for its not coming permanently into use was that, owing to the introduction of the double mule and the rapid increase in the number of spindles, mule-minding continued to be the task of a man. Apparently there were other reasons, as, notwithstanding numerous efforts, a satisfactory "self-actor" mule was not invented until 1825, when a patent was taken out by Richard Roberts, the famous Manchester machine-maker, who also gave the finishing touches to the power-loom.[3] In the meantime, various other improvements had been effected in the mule, one

also commenced about the same time as myself to make cotton machinery upon a small scale, and they had now proceeded so far as to make some of the machinery for preparing the cotton for the mule spinning machinery so far as to enable them to make the rovings, which they sold in that state to the spinners at a good profit. . . . This was in the year 1790. . . . *They* could then only make the *rovings*, without finishing the thread; and I could only *finish* the thread, without being competent to make the *rovings*."

[1] *Ibid.*, pp. 53-59. Baines, *ibid.*, p. 205.

[2] Kennedy, *ibid.*, pp. 337-338.

[3] William Fairbairn in Baines' *Lancashire and Cheshire*, VI. clxxii.. Roberts is an interesting case of a man being the owner of nearly a hundred patents and yet dying in poverty.

of which was due to John Kennedy,[1] to whose writings we are indebted for so much of the information we possess of the development of the cotton industry in the later years of the eighteenth and the early years of the nineteenth centuries.

We have just seen that one consequence of the application of artificial power to the driving of the mule was an increase in its size. Another consequence, closely associated with the one mentioned, was the appearance of the mule in factories, as contrasted with the garrets of cottages, where it had been previously employed. So long as artificial power meant water-power, factories were necessarily erected by the side of streams, mainly in the country districts. When steam-power became available they could just as well be erected in the towns, and with the increasing complexity of machinery the presence there of skilful mechanics, who were lacking in the country districts, was an item of importance.[2]

This transition became conspicuous about 1790,[3] and at this time several men who later became noted cotton-spinners were entering the industry. It was now that Robert Owen heard "about great and extraordinary discoveries that were beginning to be introduced into Manchester for spinning cotton by new and curious machinery" and was induced to leave Satterfield's to become a maker of mules.[4] Also John Kennedy and his partner James M'Connel were on the point of founding the firm, among whose business material the following letters of Samuel Crompton have been discovered.[5] Enough has been said to indicate the eminence of John Kennedy in the cotton industry, and

[1] John Kennedy "was the first to introduce the double speed or twisting motion to Crompton's mule, and he may be considered as the immediate successor of Arkwright and Crompton" (Fairbairn, *ibid.*, cxcvii.).

[2] Kennedy, *Rise and Progress of the Cotton Trade*, pp. 121-122, 126-129. *Report on State of Children employed in Manufactories* (1816), p. 344.

[3] Kennedy, *ibid.*, p. 16.

[4] *Autobiography*, p. 22.

[5] *Economic Journal*, June, 1915.

a novelist of a later day, taking as her hero a Manchester Blue-Coat apprentice in the early years of the nineteenth century, could indicate in no better way the exalted stage he had reached in his career than by allowing her readers to see him in conversation, almost as an equal, with the Manchester cotton-spinner, James M'Connel.[1]

Both these men were members of a group of Scottish youths that migrated into Lancashire from a country district in Kirkcudbrightshire in the early eighties of the eighteenth century,[2] and they were not the only members of the group to gain prominent positions in Manchester. The brothers Adam and George Murray were equally prominent as cotton-spinners; James Kennedy, brother of John Kennedy, was scarcely less prominent as the head of another cotton-spinning concern; while a brother of James M'Connel became manager of M'Connel & Kennedy's factory. If, to this group, we add Jonathan Pollard, and the Houldsworths, of whom Thomas and John were spinners in Manchester, while Henry left Manchester for Glasgow in 1799, and established a concern there, we have comprehended the principal spinners of fine yarn in the British cotton industry in the early years of the nineteenth century.[3] All these men commenced in business within a few years of each other, those of whom we have definite information having little capital, and, like Robert Owen, most of them commenced not so much as spinners as makers of cotton machinery.

When James M'Connel, John Kennedy, and Adam Murray left Scotland they became apprenticed to a man named Cannan, an uncle of James M'Connel, who himself had migrated from the same district some time before.[4] This man was a machine-maker, and had

[1] Banks, *The Manchester Man*, ch. xxxii. The author was misinformed as to the Christian name of Mr. M'Connel.

[2] Kennedy, *Early Recollections* (1849), pp. 9-10.

[3] *Report on State of Children employed in Manufactories*, pp. 234, 244.

[4] Kennedy, *Early Recollections* (1849), pp. 9-10. This man evidently gathered round himself a small colony of Scotsmen as there are others mentioned.

established himself at Chowbent, a village about twelve miles from Manchester, which a gazetteer published in 1830 still noted for the excellent quality of cotton machinery made there.[1] Thus, so far as these men were concerned, there was nothing surprising in the fact that when they began business in Manchester it was primarily as machine-makers.

But there were other reasons which have to be taken into account. At this time the making of cotton machinery had not become a specialised branch of industry, and there was a lack of experienced workmen. The firm of Dobson & Rothwell, of Bolton (now the famous firm of Dobson & Barlow), only commenced in 1790, while the birth of other textile machinery firms lay far in the future.[2] Machine-making, indeed, was the business of workers in wood rather than of workers in metal. It was almost impossible for anyone to begin spinning on any considerable scale with the new machinery without first making it. As the spinning firm of M'Connel & Kennedy expanded, it continued to make machinery for its own use long after it had ceased to accept orders from outsiders.

It was such men as these who became prominent when Crompton's mule was being introduced into town factories. Their businesses in their early stages were a mixture of machine-making and fine cotton-spinning, and in either branch they could prosper. But, as regards many of them, the intense demand for the fine yarns produced by the mule, turned the balance in favour of spinning, and, as soon as convenient, they left the making of machinery to specialised firms.

Although every branch of the cotton manufacture was affected in greater or lesser degree by Crompton's invention, it was to the finer branches that it was supremely important. The previous inventions had made possible the manufacture of cotton calicoes, and had improved the manufacture of other goods, but they were not

[1] Clarke, *The New Lancashire Gazetteer*, pp. 33-34.
[2] Dobson, *Evolution of the Spinning Machine*, pp. 108 *et seq.*

adequate to produce the quality of material required for the finest fabrics. For these, consumers in this country were still dependent upon the long-established cotton industry in the East. Five years before the date of Arkwright's first patent Joseph Shaw, of Bolton, had attempted to make British muslins at a place called Anderton, near Chorley, but with little success, owing to the lack of suitable yarn.[1] It was this deficiency which Crompton's machine supplied.

In the evidence given in 1812 before the Committee on Crompton's petition it was claimed that the manufacture of the fine fabrics, the cambrics, and the muslins, which then existed was to be attributed almost entirely to the fine yarns produced by the mule.[2] Thus in the invention of the mule may be found one of the chief causes of the transference of the seat of an industry to the Western from the Eastern world, where it had been situated from time immemorial.[3] Even as the Committee was sitting, the cotton manufacturers of the United

[1] Clarke, *Lancashire Gazetteer*, p. 4. In the paragraph in which the above information is contained it is stated that in 1782, "after Sir Richard Arkwright's improvements had furnished an abundant supply of that article (yarn), the manufacture was renewed here by Mr. Oldknow, who realised a large fortune in the production of Balasore handkerchiefs, and jaconet, and japanned muslins." Cf. *Autobiography of Robert Owen*, i., p. 25: "The first British muslins were made when I was an apprentice with Mr. M'Guffog (1781-1784), by a Mr. Oldknow at Stockport . . . who must have commenced this branch in 1780, 1781, or 1782. . . . When I first went to Mr. M'Guffog, there were no other muslins for sale except those made in the East Indies, and known as East India Muslins; but while I was with him, Mr. Oldknow began to manufacture a fabric which he called, by way of distinction, British Mull Muslin." *Cf.* also quotation from Mr. Kennedy on pp. 130-131. Both Owen and Kennedy speak of Oldknow carrying on his manufacture at Stockport. If the information given in the *Gazetteer* is correct, it appears that he commenced elsewhere. The reference in the *Gazetteer* to Arkwright's machinery ought to be, perhaps, to Crompton's mule. If not, it would appear that Oldknow first began to experiment with yarn produced by the water-frame, and later utilised that produced by the mule.

[2] *Infra*, p. 190.

[3] "The manufacture of cotton cloth was at its best in India until very recent times, and the fine Indian muslins were in great

Kingdom were turning their eyes towards the East, not as a market from which cotton fabrics were imported, but as an extensive market for goods that they produced.[1] A century later, of their immense exports nearly one half was disposed of in that part of the world.[2]

Regarding this development of the manufacture of fine cotton goods in this country, a witness has left us such a succinct account that it cannot be omitted: "About 1790, the muslin trade received a stimulus at Stockport, from the efforts of the late Samuel Oldknow, whose spirit of enterprise extended to this branch of our manufacture. He took new ground by copying some of the fabrics imported from India, which at that time supplied this kingdom with all the finer fabrics, and which the mule-spun yarn alone could imitate. He was very successful in carrying on the ingenious processes which he had devised; but the French Revolution creating a panic and general stagnation for a time, he abandoned this branch of the trade, and betook himself to his large water-mill at Mellor, which was built in the year 1790. On his retiring from the manufacturing of fine muslin, Messrs. Horrocks, who had just established

demand and commanded high prices, both in the Roman Empire and in Mediæval Europe. The industry was one of the main factors in the wealth of ancient India, and the transfer of that industry to England and the United States, and the cheapening of the process by mechanical ginning, spinning and weaving, is perhaps the greatest single factor in the economic history of our own time" (Schoff, *The Periplus of the Erythrean Sea* (1912), p. 71).

[1] In 1815 a small amount of British yarn was sent to India; six years later it had become a regular export, and in 1829 amounted to 3,185,639 lbs. In 1815, 800,000 yards of British cloth were sent, and in 1830, 45,000,000 yards (Ure, *ibid.*, i., p. 118). In 1831 the manufacturers and dealers in Bengal presented a petition regarding the import of British cotton goods (Baines, *ibid.*, pp. 81-82).

[2] Before the outbreak of the European War it was estimated that nearly 80 per cent. of the total value of piece goods produced in the United Kingdom were exported. In 1913, British India took 36 per cent. and China 12 per cent. of the piece goods exported (*Report of Committee on Textile Trades* (1918), p. 60).

themselves at Preston as mule-spinners, took up what he had laid down. They became extensive manufacturers of cloth similar to that made by Oldknow, and supplied the same market, London. This gave a new stimulus in that district, and immediately upon the subsiding of the panic caused by the French Revolution, a market sprang up on the Continent for yarns of all kinds, but principally for muslin yarns, up to the highest numbers that could be pronounced. . . . The Scotch in Lanarkshire, Renfrewshire, being long in the habit of weaving fine cambric from flax yarn, and silk friezes, had also turned their hands to the manufacture of fine cotton fabrics principally from the fine yarns produced by Hargreaves' and other subsequent machines. The Lancashire manufacturers followed them in the thicker and firmer fabrics, and about 1805 or 1806 the Nottingham lace trade sprang up. Mr. Heathcote (formerly a whitesmith) invented a machine by which he could make lace similar to that of Brussels and Buckingham, which was worked by hand; and he principally if not wholly, at first, used fine flax yarns. Twofold fine cotton twisted together was found to answer very well as a substitute; and as it required the finest yarns, a great impulse was given towards perfecting the production of fine cotton yarn. It bore a high price, as the lace manufacturer had only to compete with hand-spun thread, and hand-made lace." [1]

In this account Mr. Kennedy implies the existence of markets for fine yarns in Lancashire, at Nottingham, Glasgow, and on the Continent. To these must be added the market at Belfast, where, in 1800, in the town and within a circuit of ten miles 37,000 people were said to be employed in the cotton manufacture.[2] Glasgow was

[1] Kennedy, *Brief Memoir of Samuel Crompton*, pp. 339, 344-345.
Heathcote's machine was patented about 1809 and soon afterwards he is said to have obtained five guineas a yard for lace which in 1844 could be equalled at eighteenpence a yard (Dodd, *Textile Manufactures of Great Britain* (1844), pp. 210-211).
[2] Ure, *ibid.*, p. 295.

the most important market that the firm of M'Connel & Kennedy supplied with fine yarns during Mr. Kennedy's connection with it, which terminated in 1826, but from 1795 until that date merchants and manufacturers in Belfast and neighbourhood were among its most important customers.[1]

From what has been said it will be apparent, so far as the development of the cotton industry is concerned, that the period from the introduction of the jenny and Arkwright's machinery to the first years of the nineteenth century may be divided into two parts, with a date about 1790 marking the division. During the first part the problem of providing adequate supplies of yarn for all kinds of cotton cloth was definitely solved, and a new cotton manufacture and a new system of organisation were born. In the second part that which had been achieved during the preceding twenty years was developed and consolidated, and the cotton industry, in its spinning branch, assumed its modern form. The average import of cotton from 1776 to 1780 amounted to $6\frac{3}{4}$ million pounds; from 1786 to 1790 the amount reached $25\frac{1}{2}$ million pounds; from 1796 to 1800 it increased to $37\frac{1}{2}$ million pounds; and during the next five years to nearly $58\frac{1}{2}$ million pounds; afterwards it increased very little until the conclusion of the war.[2] During the last decades of the eighteenth century cotton, particularly of the finer kinds, had assumed a new importance, and as a direct consequence of the developments in England, the problem of its adequate supply was already being solved by our kinsmen across the Atlantic.[3] In 1790 the United States had only just commenced to send small quantities of cotton into Great Britain; fifteen years later the import was no less than $32\frac{1}{2}$ million pounds.[4]

[1] *Economic Journal*, June, 1915.
[2] Baines, *ibid.*, pp. 346-347.
[3] Kennedy, *ibid.*, 347.
[4] Hammond, *The Cotton Industry* (1897), p. 16. *Ibid.*, App. I.

III

To a brief consideration of certain other important changes that took place during the period, a classic passage written by William Radcliffe forms a useful introduction : " From the year 1770 to 1788 a complete change had gradually been effected in the spinning of yarns. That of wool had disappeared altogether, and that of linen was also nearly gone ; cotton, cotton, cotton was become the almost universal material for employment. The hand wheels, with the exception of one establishment, were all thrown into lumber-rooms, the yarn was all spun on common jennies, the carding for all numbers up to 40 hanks in the pound was done on carding-engines ; but the finer numbers of 60 to 80 were still carded by hand, it being a general opinion at that time that machine-carding would never answer for fine numbers. In weaving no great alteration had taken place during these eighteen years save the introduction of the fly-shuttle, a change in the woollen looms to fustians and calico, and the linen nearly gone, except the few fine fabrics in which there was a mixture of cotton. To the best of my recollection there was no increase of looms during this period—but rather a decrease. . . . But the mule-twist now coming into vogue, for the warp, as well as weft, added to the water-twist and common jenny yarns, with an increasing demand for every fabric the loom could produce, put all hands in request of every age and description. The fabrics made from wool or linen vanished, while the old loom-shops being insufficient, every lumber room, even old barns, cart-houses, and outbuildings of any description were repaired, windows broke through old blank walls and all fitted up for loom-shops. This source of making room being at length exhausted, new weavers' cottages with loom-shops rose up in every direction ; all immediately filled, and when in full work the weekly circulation of money, as the price of labour only, rose to five times the amount ever before experienced in this subdivision, every family bringing

home weekly 40, 60, 80, 100, or even 120 shillings per week ! ! ! " [1]

In this passage the transition from the use of the hand-wheel in spinning, and the manufacture of woollen, linen, and mixed goods, to the use of the inventions, and the manufacture of all kinds of cotton goods is vividly described. There is abundant evidence, in addition to that given by Radcliffe, of the prosperity of the weavers as a consequence of the changes,[2] but this is a matter which must be considered along with another, especially as much turns upon them in estimating the social consequences of the transition.

Reference has already been made to the view that in the Lancashire textile industry, prior to this transition, the operations were performed by more or less independent

[1] *The Origin of Power-Loom Weaving* (1828), pp. 61-62.

[2] French, *ibid.*, pp. 115-116. Many lists of wages are given in the reports of various parliamentary committees—*e.g. Report on Commerce, Manufactures and Shipping* (1833), p. 699. The following are the prices paid for weaving (on the handloom) a 6-4ths, 60 reed cambric, 120 picks in one inch. They were taken in June in each year. In 1795-1796 the length was 20 yards and afterwards 24 yards. A weaver working one piece a week was said to be in full employment. The prices are interesting, not only as showing the decline during the period they cover, but also as the fluctuations indicate the state of trade with remarkable accuracy :

Year	Price	Year	Price	Year	Price
	s. *d.*		*s.* *d.*		*s.* *d.*
1795	33 3	1808	14 0	1821	8 6
1796	33 3	1809	16 0	1822	8 6
1797	29 0	1810	19 6	1823	8 6
1798	30 0	1811	14 0	1824	8 6
1799	25 0	1812	14 0	1825	8 6
1800	25 0	1813	15 0	1826	7 6
1801	25 0	1814	24 0	1827	6 0
1802	29 0	1815	14 0	1828	6 0
1803	24 0	1816	12 0	1829	5 6
1804	20 0	1817	9 0	1830	5 6
1805	25 0	1818	9 0	1831	5 6
1806	22 0	1819	9 6	1832	5 6
1807	18 0	1820	9 0	1833	5 6

producers and some evidence was presented to the contrary. But in addition to this view there is another—indeed, between the two there is a close connection—that these producers were at least part-time agriculturalists engaged in cultivating small farms.[1] Mainly this view has been based upon another passage by Radcliffe, and it has also been influenced, no doubt, by Defoe's picturesque account of a number of small clothiers in Yorkshire.[2]

Just as there is nothing in the petitions presented to Parliament from Lancashire in the eighteenth century to support the independent-producer view, but much that suggests the contrary, so as regards the small-farmer view: it is difficult to imagine independent producers and small farmers striving to form themselves into trade unions.

[1] *Cf.* Warner, *Landmarks in English Industrial History* (1905), pp. 292-294.

[2] Defoe, *A Tour Through Great Britain* (1769 edition), iii., pp. 144-145. The passage by Radcliffe runs as follows:—"In the year 1770, the land in our township (Mellor) was occupied by between fifty and sixty farmers; rents, to the best of my recollection, did not exceed 10s per statute acre, and out of these fifty or sixty farmers, there were only six or seven who raised their rents directly from the produce of their farms; all the rest got their rent partly in some branch of trade, such as spinning and weaving woollen, linen, or cotton. The cottagers were employed entirely in this manner, except for a few weeks in the harvest. Being one of those cottagers, and intimately acquainted with all the rest, as well as with every farmer, I am the better able to relate particularly how the change from the old system of hand-labour to the new one of machinery operated in raising the price of land in the subdivision I am speaking of. Cottage rents at that time, with convenient loom-shop and a small garden attached, were from one and a half to two guineas per annum. The father of a family would earn from eight shillings to half-a-guinea at his loom, and his sons, if he had one, two, or three, alongside of him, six or eight shillings each per week; but the great sheet-anchor of all cottages and small farms was the labour attached to the hand-wheel, and when it is considered that it required six to eight hands to prepare and spin yarn, of any of the three materials I have mentioned, sufficient for the consumption of one weaver—this shows clearly the inexhaustible source there was for labour for every person from the age of seven to eighty years (who retained their sight and could move their hands) to earn their bread, say one to three shillings per week, without going to the parish" (pp. 59-60).

At the same time Radcliffe's statement cannot be dismissed as baseless. It is rather a question as to how far his description of the township of Mellor is to be regarded as of general application, and as to how much should be deduced from it regarding the extent to which industrial and agricultural occupations were associated. Evidence to show that such association did exist may be found in the fairly frequent advertisements in *The Manchester Mercury* of small farms, with loom-houses, suitable for weavers. Aikin, whose book was published in 1795, refers to the size of farms in the parish of Middleton as "from twenty to thirty acres, which are occupied mostly by weavers, who alternately engage themselves in the pursuits of husbandry and the more lucrative one of the shuttle," and again, in the neighbouring parish of Rochdale, "The farms, being generally occupied by manufacturers, are small, seldom exceeding 70l. per annum." [1] In Lancashire, he states, "the more general size of farms is from 50 down to 20 acres, or even as much only as will keep a horse or a cow," and further, "The yeomanry, formerly numerous and respectable, have generally diminished of late, many of them having entered into trade: but in their stead, a number of small proprietors have been introduced, whose chief subsistence depends upon manufactures, but who have purchased land round their houses, which they cultivate by way of convenience and variety." [2]

Evidence regarding the association of industrial and agricultural occupations continues until beyond the first quarter of the nineteenth century. At that time it could be stated that "in Lancashire there appears to be among the hand-loom weavers two classes almost wholly distinct from each other; the one, who though they take in work in their own houses or cellars, are congregated in the large manufacturing towns; and the other, scattered in small hamlets, or single houses, in various districts throughout the manufacturing county. . . . It appears that persons of this description, for many years

[1] Aikin, *Manchester*, p. 244-246.

[2] *Ibid.*, p. 23.

past, have been occupiers of small farms of a few acres, which they have held at high rents ; and combining the business of a hand-loom weaver, with that of a working farmer, have assisted to raise the rent of their land from the profits of their loom." [1]

In view of this mass of evidence, statements which imply that, in the eighteenth century, the Lancashire textile industry was carried on by part-time industrialists would seem to have solid foundation. Nevertheless, even more cautious statements require considerable qualification. In the first place, for obvious reasons, we must rule out the great majority of those engaged in the industry who lived in Manchester and its immediate neighbourhood, and also those in the other centres of congregated population.[2] These were evidently in a similar position to the first class mentioned in the above quotation. In the eighteenth century, as in the early nineteenth, those who were associated with both agriculture and industry have to be sought in country districts such as that to which Radcliffe refers.

But a careful reading of what Radcliffe says will show that, even in Mellor, a distinction has to be drawn between the small farmers who "got their rent partly in some branch of trade, such as weaving woollen, linen, or cotton," and the cottagers who "were employed entirely in this manner, except for a few weeks in the harvest." Evidently the members of the latter class could not be regarded as agriculturalists in any reasonable sense, although, apparently, they had small gardens attached to their cottages. What proportion the cottagers bore to the small farmers it is impossible to say with certainty, but it seems extremely probable that they were in a considerable majority.

In 1795 Aikin described Mellor as having "a chapel

[1] Reports, etc., 1826-1827, v., p. 5. Quoted by Chapman, *Lancashire Cotton Industry*, p. 11. Other references are given in the same page.

[2] "The domestic manufacturers resided generally in the outskirts of large towns or at still more remote distances" (Gaskell, *The Manufacturing Population of England* (1833), p. 17).

of the Church of England round which are a few straggling houses,"[1] but probably this description referred only to the centre of the township. When the 1801 census was taken the following particulars were collected:—the township consisted of 270 houses of which 19 were uninhabited, and the remainder contained 301 families. It had a population of 1670 (805 males and 865 females), of whom 68 were employed chiefly in agriculture and 945 chiefly in trade, manufactures or handicraft, leaving 657 not included in these two classes.[2] Between 1770 (the date mentioned by Radcliffe) and 1801 population generally had increased, though it is hardly likely that it would have increased much in a place like Mellor: indeed, the fact that, at the latter date, there were 19 houses uninhabited strongly suggests that within a considerable time it had neither increased nor decreased to any extent. If it can be assumed that the number of families was the same in 1770 as in 1801, then allowing 55 of these to have been farmer families (Radcliffe's fifty or sixty), 246 families would be left as otherwise occupied: roughly a proportion of 9 to 2. Even allowing for a considerable increase in the number of families by 1801, it appears that in 1770 the farmer families must have been greatly outnumbered by the others.

Though the description of the parish of Middleton by Aikin is not so picturesque as the description of the township of Mellor by Radcliffe, it is not improbable, without any great distortion of facts, that one might be used for the other, and no doubt for other places as well. In some cases (as in the six or seven mentioned by Radcliffe in Mellor) it appears that of the two occupations the agricultural may have been the more prominent, and that in others they were more equal. If French's statement relating to Bolton in 1753 may be accepted as correct, this was evidently the case in the country districts in the neighbourhood of that town at that time.[3]

[1] Aikin, *ibid.*, p. 482.
[2] *Abstract of Population*, Act 41, Geo. III., 1800, p. 59.
[3] French, *ibid.*, p. 9.

Even in cases where industrial activities were of least importance, taking into account the size of farms and other evidence, there can be little doubt that a spinning-wheel was to be found in the farm-houses.[1] Starting from these, we appear to get a gradation with industrial activities becoming more and more important, until we reach the cottagers mentioned by Radcliffe, who can hardly be regarded as engaged in agricultural activities at all. In the country districts it was these cottagers, and the small farmers of the type to which he refers, who constituted the main supply of manufacturing labour.

This view is substantiated in the writings of Dr. Gaskell, which are of particular importance in regard to the question under consideration, as expressing the views of a man who intensely disliked the factory system, and who naturally was inclined to present the system which it displaced in as favourable a light as possible.[2]

He distinguished between three classes in the country districts who were affected by the transition in industry : the yeomen or small freeholders who apparently were entirely engaged in agriculture ; a superior class of artisans, primarily engaged in manufacturing, but who commonly rented some land as an accessory ; a secondary or inferior class of artisans entirely dependent upon manufacturing.[3]

Clearly, the members of this second class correspond to Radcliffe's small farmers, and the members of the third to his cottagers. According to Gaskell, the yeomen were anything but an enterprising class ; they cultivated their land as had their forefathers and regarded innovation as

[1] Aikin, *ibid.*, p. 47 : "On the dairy farms (in Cheshire) one woman servant is kept to every ten cows, who is employed in winter in spinning and other household business, but in milking is assisted by all the other servants of the farm."

[2] Dr. Gaskell's views are contained in *The Manufacturing Population of England* (1833) and *Artisans and Machinery* (1836), the latter being a reprint of the former with additions.

[3] "The great body of hand-loom weavers had at all times been divided by a well-defined line of demarcation into two very distinct classes. This distinction arose from the circumstance of their being landholders or being entirely dependent upon weaving for their support" (*Manufacturing Population*, p. 36).

rank heresy, with the result that, in the agricultural changes of the eighteenth century which accompanied the industrial changes, they failed to keep pace with the march of events.[1] The farming of the second class was slovenly and definitely subordinate to their industrial activities; its importance in Gaskell's view was that it gave to the members of the class opportunity for a healthy employment and raised them above the rank of mere labourers, and, as generally the weavers had much spare time on their hands owing to irregularity of work, it is evident that it would be useful in providing a subsidiary occupation.[2] The members of the third class, who merely had a garden, were especially prone to suffer from the scarcity of yarn and irregularity of work, and on occasion they underwent severe privation, the uncertainty of their livelihood engendering lack of forethought, improvidence, and carelessness in expenditure.[3]

With the coming of the jenny and the mule the circumstances of the two latter classes were changed, as without extra outlay of capital more cloth could be produced by their looms, and consequently they derived great benefit from the inventions. Indeed, Gaskell asserts that a material improvement had been gradually taking place in their position during the half-century preceding the application of steam-power to weaving,[4] not so much because of increased payment for their labour, as because of a constantly increasing supply of yarn, which enabled them to turn out a greater and more regular quantity of cloth.[5]

One of the first effects of the improvement was to cause the superior class of artisans to abandon their agricultural activities, owing to the fact that their labour

[1] *Manufacturing Population*, p. 41. [2] *Ibid.*, pp. 16, 34.
[3] *Ibid.*, p. 37.
[4] He gives 1806 as the date of the introduction of power-looms. It was about this time that, through the efforts of Horrocks, Johnson and Radcliffe, they became practicable. In February, 1807, Robert Owen wrote to M'Connel and Kennedy inquiring about "the improvements presently in progress in weaving by power."
[5] *Ibid.*, pp. 34, 38.

with the loom had become so much more profitable. Gaskell fully recognised this material advance, but considered that it was gained at the expense of a lowered status; previously the members of this class had been on a level with the yeoman; by the change they had become labourers.[1] The effect upon the inferior class of artisans was that they were at once elevated to a position of equality with the superior class, and though Gaskell recognised that the amalgamation raised their general character as a body, and gave them community of interest and feeling, the change did not favourably impress him.[2] Whatever else Gaskell may have been, he was certainly not a strong believer in the elimination of class distinctions.

But the effects of these developments in industry extended to the yeomen. Previously, although the members of this class had not been noted for their efficiency in farming, they had been able to maintain their position owing to the still less efficiency of the farmer-manufacturers who had served them as a bulwark, and, as the latter disappeared from agriculture, and as new methods and a new type of cultivator appeared, the yeomen lost the markets they had previously supplied.

At this stage many of the yeomen turned their attention to the new machines which were being introduced into industry and purchased them, in five-sevenths of the cases having to borrow money, generally on mortgage. But as a result, for a time, a large quantity of yarn was produced in old farm-houses. Difficulties soon arose, owing, on the one hand, to the erection of factories where the machinery was driven by water-power, and, on the other, to the rapid improvements in machinery.[3] In competition with the factories, the profits of those who had embarked on spinning in the farm-houses decreased, and through the other cause, the latest jenny bought in one year could hardly produce enough yarn in the following year to repay the outlay. Consequently, they

[1] *Manufacturing Population*, pp. 35, 39. [2] *Ibid.*, pp. 37-38.
[3] *Ibid.*, pp. 41-42.

were compelled to dispose of the machine or to arrange an exchange with a maker on disadvantageous terms. In Gaskell's opinion the number of machines thus thrown back into the market facilitated the growth of factories. Although a machine was obsolete before a domestic spinner had time to cover the first cost, yet, worked along with others and driven by water-power, such a machine was a profitable investment. Thus many of the members of the yeomen class lost their position in agriculture, and later became incapable of maintaining their position in industry. But it was not the case with all of them. A few, Gaskell states, shook off their slothful habits of body and mind and were successful in their new sphere of activity, several of the most eminently successful of the steam manufacturers springing from this class.[1]

This account of one aspect of the transition in industry, coming from a man whose writings were a vigorous attack upon the system that emerged, and corroborated as it is by much independent evidence, may, in general outline, be accepted as undoubtedly trustworthy. But its chief importance for our purpose is the indication it gives of the extent to which those engaged in the textile industries in the country districts in the eighteenth century were connected with agriculture, and also in its giving at least part of the explanation of the break-down of the connection during the transition period. Apparently the principal link was constituted by those whom Gaskell regarded as a superior class of artisans, and whom Radcliffe called small-farmers. Of the two it is fairly evident that Gaskell's designation was the more appropriate. Whether this class was absolutely a large number it is impossible to say: possibly what has been suggested regarding Mellor may give some indication of its relative number in the country districts. But when we take into account the total number engaged in the Lancashire

[1] *Manufacturing Population*, pp. 43-45. In *Artisans and Machinery*, p. 33, he mentions Peel, Strutt and others. *Cf.* Aikin, *ante*, p. 136.

textile industry in the towns and in the country districts, the conclusion that the relative number of part-time agriculturalists was small would seem to have abundant justification. They can hardly be regarded as the typical workpeople.

But there is another question: To what extent were those in the country districts independent producers, and thus different from those in the towns, whose position in this respect has already been considered? That there may have been some independent producers is probably true,[1] but there is little reason to think that the number was large. Gaskell states that "the yarn . . . which was wanted by the weaver was received or delivered by agents who travelled for wholesale houses or depôts were established in particular neighbourhoods where he could call weekly."[2] This is clearly the "putting-out" system which has been described, and under this system, although the workpeople worked in their own houses they could not be regarded as independent producers.

The agents mentioned by Gaskell were evidently employees of the manufacturers, but, as frequent advertisements show, there were also men in the country districts who described themselves as "putters-out," and others, who apparently differed very little from them, who were ready to undertake work on commission. Then there were the country fustian manufacturers, some of whom, indeed, probably occupied a position little different from the others, as they too sometimes declared themselves ready to make goods on commission.[3] The relation of these men to the workpeople is indicated in the statement of one of them that he had "a quantity of approved weavers at command."[4] In the country districts of

[1] In the parish of Oldham "there were a considerable number of weavers who worked on their own account and held at the same time small pieces of land" (Butterworth, *History of Oldham*, p. 101. Quoted by Chapman, *ibid.*, p. 11).

[2] Gaskell, *ibid.*, p. 17.

[3] See *infra*, p. 197.

[4] *Manchester Mercury*, 5th October 1779.

Lancashire in the eighteenth century there is ample reason for saying that the great majority of workpeople in the textile industry were employed by these various types of men. Generally their position was little, if any, different from the position of the workpeople in the towns—indeed, as we have seen, the smallware weavers' combination in 1758 extended to country districts such as Ashton and Royton.

In view of the evidence, it can safely be said that among the first effects of the developments in the Lancashire textile industry in the eighteenth century was an improvement in the position of the workpeople, especially of the weavers, and that, after the cancellation of Arkwright's patent, and the fuller utilisation of the mule, there was a great burst of prosperity. As is well known, this period of prosperity was not of long duration ; soon the weavers were plunged into a longer period of distress. Weavers formerly engaged in other branches of trade turned to cotton.[1] Great numbers of agricultural labourers became weavers, with the effect of raising wages in their former occupation.[2] But in addition, and far more important, was the war, as a consequence of which the natural expansion of markets was impeded and the course of trade marked by violent fluctuations and crises. During this period even the mule-spinners, whose career as the "aristocracy" of labour in the cotton trade had now commenced, had to undergo severe privation, but their higher skill and superior organisation prevented them from sinking into the depths of distress which was the lot of the weavers.[3]

[1] Gaskell, *ibid.*, p. 46-47. *Report of Committee on Cotton Weavers', etc., Petitions*, p. 16.

[2] *Report of Committee on Cotton Weavers' Petitions* (1808), p. 24.

[3] Some information regarding the state of trade is given in two papers by the present writer on "The Cotton Trade during the Revolutionary and Napoleonic Wars" (*Transactions of the Manchester Statistical Society*, 1916, 1917). The mule-spinners were combined in the early nineties of the eighteenth century, and although they claimed, in answer to the assertion that their combination was illegal, that it existed only to relieve their fellow-labourers in distress, they managed to conduct wages

The transition in the cotton industry is, of course, only part of that general transition in industry and agriculture in England which is now concisely known as the Industrial Revolution, and sometimes the last decades of the eighteenth and the early decades of the nineteenth centuries are taken to cover the period of the transition. That the movement was proceeding apace in these years there can be no doubt, but it would be erroneous to regard what happened then as more than an acceleration of what had been taking place before. At any rate, so far as the cotton industry is concerned, from the moment that we can take hold of anything that may be called a cotton industry a continuous development can be traced in all directions. Even the inventions of the jenny and the water-frame, when viewed in their right relations, are seen as the outcome of efforts extending over more than thirty years preceding their appearance, and come as something expected, rather than as something sudden and unique.

Frequently, and with much justification, the view is taken of this transition period, particularly of the last decade of the eighteenth and the first decades of the nineteenth centuries, that it was a time of great distress and of social retrogression for a large part of the population, and considerable stress is laid upon the economic movement as a cause. *A priori* the idea that an economic movement such as we have been considering, which was characterised on the one hand by a greater power of production, and on the other by an expanding economic unity could, of itself, be a cause of widespread distress and of social retrogression is a hard one to accept. Moreover, when the previous position in Lancashire and the effects the economic movement was having upon

disputes in an efficient manner. The combination continued to exist after the Combination Acts were passed. In 1803 the master spinners in the town and neighbourhood of Manchester resolved to form themselves into an Association and raise a fund of £20,000 by each member contributing in proportion to the number of spindles he employed in order to defeat "this dangerous and unjust combination" (Circular dated 7th October 1803).

it are taken into account, there seems no good reason why it should be accepted for this period. The movement, in its early stages, was undoubtedly much more constructive than destructive. An explanation of what transpired later has to be sought in causes which distorted the economic movement, and, especially during that portion of the period mentioned, such causes are not far to seek.

Attention has been drawn to the unrest that prevailed in the country during the period from the outbreak of the Seven Years' War to beyond the conclusion of the American War, and from what has obtained in similar circumstances, both before and since, that the fundamental cause was to be found in the wars can hardly be doubted. Indeed, as we have seen, notwithstanding much confused thinking, the fact was occasionally recognised at the time.

In 1793, when the war commenced which was destined to continue almost without intermission for nearly a quarter of a century, a similar cause at once began to operate, but with greater intensity, owing to the economic changes which had already taken place, and which were revealing their most striking results at that time. In considering this stage of the Industrial Revolution it must be borne in mind that, as a result of the war, the economic changes were probably intensified and concentrated in this country to an extent they would not have been in time of peace ; on the other hand, movements which were making for social development were checked by the exercise of political power. It is here where we get the connection between the economic movement and the social retrogression and evils of the time. In the circumstances created by the war, anything which appeared to obstruct the working of the economic or political machinery was not to be tolerated, and legislation was invoked to clear away possible impediments. In the nature of the case, the legislation was an expression of the views of those in whose hands lay political power—class legislation of which the Combination

Acts and the General Enclosure Act are prominent examples.[1]

The Napoleonic War thus becomes the dominant factor in the social and economic history of the later Industrial Revolution period. Owing to its occurrence, the economic movement in this country was distorted,

[1] There is a striking resemblance between the situation during the Napoleonic War and that during the recent European War. In this country there was the same fear about the food supply and similar efforts were made to conserve and increase it. In 1795 the members of the Houses of Parliament agreed by resolution to restrict the consumption of wheaten bread in their families, and their example was followed by various bodies throughout the country. In *The Manchester Mercury* numerous recipes appeared for making bread out of ingredients other than wheat. The Board of Agriculture experimented in making bread with substitutes for wheat and publicly exhibited no fewer than eighty different sorts (Curtler, *A Short History of English Agriculture* (1909), p. 230). The General Enclosure Act avowedly had as its aim an increase in the food supply and was passed during a terrible time of distress. Except that allotments were not regarded with much favour, the agricultural legislation was closely analogous to that of the recent war period. In the political and the industrial spheres the Combination Act took the place of sections of the Munitions Acts and the Defence of the Realm Acts. "Under the shadow of the French Revolution the English governing classes regarded all associations of the common people with the utmost alarm. In this general terror lest insubordination should develop into rebellion were merged both the capitalist's objection to high wages and the politician's dislike of Democratic institutions" (Webb, *History of Trade Unionism*, p. 64). Necessarily the vast proportion of the national expenditure (including loans to Allies) went to provide war materials of British manufacture, and war services, and there were the same complaints of the agricultural, the merchant, and the tradesmen, classes becoming rich out of war profits. Also, generally speaking, there was a great increase of employment, particularly in connection with the army, the navy, and Government offices. In the industrial sphere periods of intense pressure alternated with periods of great depression when distress was rampant. The great distinction between the two periods is evidently to be attributed to the social and political development which had taken place during the intervening century whereby flagrant class legislation had become impossible. Much information of a reliable character concerning conditions during the Napoleonic War is given by Lowe, in *The Present State of England* (1822). In the correspondence of M'Connel and Kennedy to and from their customers in England, Scotland, Ireland and on the Continent, the industrial situation is indicated day by day from 1795 until beyond the conclusion of the war.

and the increased power of production, instead of improving the material welfare of the community, had to be devoted to the prosecution of the war ; social development was thwarted and thrown back ; and the relationships between employers and workpeople, with which the latter, in the middle of the eighteenth century, in Lancashire, had shown their dissatisfaction and were striving through combination to modify, were continued and solidified, and left as a heritage to the nineteenth and the twentieth centuries.

In view of the growth and activity of trade unions during the eighteenth century, is it too much to say that, had not the war broken out, and had they been allowed to develop as they certainly were developing, problems of industrial relationships which have yet to be solved would have been faced a century ago, and possibly solutions found which would have meant that the present system would have been a considerable modification on that which now exists ? However this may be, it may be said that the social retrogression and evils which mark the Industrial Revolution period are only in a very secondary sense to be attributed to the economic movement : the primary cause is to be found in the war in which the country was engaged.

CHAPTER VI

CONCERNING THE AFFAIRS OF SAMUEL CROMPTON

It now remains to follow the fortunes of Samuel Crompton to the time when he wrote the following letters. Some time before 1785 he left Hall-i'-th'-Wood and went to live at Oldhams, in the township of Sharples, about three miles north of Bolton, where he combined the business of a small farmer with that of a spinner.[1]

During his residence at this place, Robert Peel is said to have visited him with the object of persuading him to enter his employment, or even to become a partner with him. French suggests that the main reason for Crompton's refusal was a dislike of Peel, which was maintained to the end of his life. This may have been the case, of course, but his reference to Sir Robert (as he then was) in the following letters do not betray any animosity, and Peel certainly appears to have exerted himself on his behalf.[2] In the last year of his residence at Oldhams, Crompton occupied the office of overseer of the poor for the township of Sharples, a fact in which there is nothing surprising. Crompton can only be regarded as a working man, but that he had fully utilised his limited opportunities of education, his letters and other attainments show.[3]

In 1791 he removed to a house in King Street, Bolton, where in the attics, and in those of the two adjoining

[1] French, *ibid.*, p. 90.

[2] *Infra.*, pp. 175, 176, 184, 193.

[3] He was something of a musician, building himself an organ and composing several hymn tunes. French, *ibid.*, pp. 133 *et seq.* The organ and some of the MSS. of his music are now in Hall-i'-th'-Wood.

houses, he carried on his spinning business, in which he was assisted by two of his sons. One of the strongest proofs that Crompton was not a man of business is that, at this time, he did not establish himself as a successful spinner, as did others with whom he was acquainted. It can hardly have been lack of capital which prevented him, for he must have possessed as much as his friend John Kennedy, who, in this very year, began in business with James M'Connel, and it is known that between them they only raised £250.[1]

The next interesting event in Crompton's career, so far as the following letters are concerned, occurred in 1802-1803, and, as regards this event, French stands in need of considerable correction. He informs us that "In 1800 some gentlemen of Manchester, sensible that Mr. Crompton had been ill used and neglected, agreed without his previous knowledge to promote a subscription on such a scale as would result in a substantial reward for his labours, a provision for his family, and a sufficient security for his comfort during life. The principal promoters of this scheme were Mr. George Lee and Mr. Kennedy." [2]

As a matter of fact, this subscription was only in its initial stages at the very end of 1802, and, as Crompton states, must have just got under way [3] when the war broke out again in May, 1803, after a short pause of little more than eighteen months. Further, if French's suggestion is that Crompton did not know of the subscription until after it was launched, the necessary correction is supplied in one of the letters, in which we see that Crompton himself was active in striving to make it a success.[4]

As a consequence of French's imperfect knowledge of

[1] *Economic Journal*, June, 1915.

[2] French, *ibid.*, p. 123. Mr. Lee was manager for Mr. Drinkwater prior to Robert Owen occupying that position. He left to become partner in 1791 in a firm which attained a prominent position in Manchester under the name of Phillips & Lee (*Autobiography of Robert Owen*, pp. 26-29).

[3] *Infra.*, pp. 169.

[4] *Infra*, p. 167.

the exact time of the subscription, the explanation which he offers of the comparatively small sum raised is clearly wide of the mark: "But this hopeful scheme, generous and noble in its intention, followed the usual course of Crompton's evil fortune. Before it could be carried out the country was suffering from a failure in the crops and consequent high price of food, a lamentable war broke out, the horrors of the French Revolution approached their crisis, trade was all but extinguished—and the result was a sum quite inadequate to the proposed purpose or to his deserts."[1]

It is true that the year 1800 was a terrible year, with high food prices, as was the greater part of the next year, but before the end food prices had fallen considerably, and the cotton trade was entering upon somewhat of a boom, the spinning branch was increasing, and in the following summer a large number of new factories were erected in Manchester.[2] Thus the time could not have been more propitious for the promotion of the subscription, and it is more than probable that a far larger sum than the £300 to £400 which Crompton mentions would have been raised had not, as he says, the war broken out again.

Although French's explanation of the comparative failure of the subscription is incorrect, his comment on the ill fortune which dogged Crompton's footsteps may be agreed with. At the same time, it is exceedingly doubtful whether the amount of the subscription would have reached the £5000 which he obtained by Parliamentary grant in 1812. If anything like that amount had been raised, one fears that the application to Parliament nine years later might not have been so well supported, and a perusal of the letters may also suggest the fear that, even if such had been the case, it might have fallen upon deaf ears so far as Parliament was concerned.

Shortly after Crompton received the proceeds of the

[1] French, *ibid.*, p. 124.
[2] *Transactions, Manchester Statistical Society*, Feb., 1916.

subscription, he used a portion to extend his business of spinning and weaving, renting the top floor of a factory, where he employed three men, one woman and six children.[1] One sore complaint that he had to make was the difficulty he experienced in keeping his work-people, owing to inducements to leave him offered by those who expected to learn something from them. In later years he actually attributed his lack of success in the spinning business to this fact, and stated that on account of it he was obliged for years to give up spinning.[2] French goes so far as to say that one of Crompton's sons was unable to resist inducements of this character and in consequence left his father's service.[3] There is nothing intrinsically improbable in the statement, for one thing of which there does appear to be ample evidence is that whatever troubles Crompton had to contend with from outsiders during his career, he did not receive much support from his own kindred in bearing them. In view of Crompton's character, it is not an unreasonable assumption that the somewhat persistent efforts to obtain recompense adequate to his services were due more to them than to himself.

[1] French, p. 125. "In 1803 he supplied the fourth part of a sum raised to build a place of worship for the religious body with which he had connected himself in Bury Street, Little Bolton" (*ibid.*, p. 132).

[2] "And though I pushed on, intending to have a good share in the spinning line, yet I found there was an evil which I had not foreseen, and of much greater magnitude than giving up the machine, viz., that I must be always teaching green hands, employ none, or quit the country; it being believed that if I taught them, they knew their business well. So that for years I had no choice left but to give up spinning, or quit my native land. . . . But to this day, though it is more than thirty years since my first machine was shown to the public, I am hunted and watched with as much never-ceasing care as if I was the most notorious villain that ever disgraced the human form; and do affirm, that if I were to go to a smithy to get a common nail made, if opportunity offered to the bystanders, they would examine it most minutely to see if it was anything but a nail" (Letter quoted by Brown, *The Basis of Mr. Samuel Crompton's Claims*, p. 30).

[3] French, *ibid.*, pp. 125-126.

In 1807, he wrote to Sir Joseph Banks, President of the Royal Society, with the object of interesting him in his case, and suggested that it might be brought before the King and his ministers.[1] Owing probably to the letter having been wrongly addressed, it reached the Society of Arts, and was considered by the committee, when the secretary was instructed to send a reply, but for some reason no reply reached Crompton, which led him to believe that he had been slighted. It appears that, in some way, this fact must have become known, and the matter was reconsidered in March, 1811, when an answer was sent, which drew from Crompton a tart rejoinder, in reply to which he was informed that the Society of Arts was unable to do anything, as it did not possess funds to give large rewards, although, actually, Crompton had not applied to the Society for a reward. The whole incident was unfortunate, and undoubtedly did much further to embitter him, convinced as he already was that the world was against him.[2]

At this time Crompton, although by no means wealthy, according to his standard of living, was in fairly easy circumstances, and "had even lent a few hundred pounds," but French suggests that he was anxious about the future position of his family.[3] However this may have been, it is clear that, shortly after the incident with the Society of Arts had terminated, a move was made which, in the next year, resulted in the application to Parliament for financial recognition of his services as inventor. Of the negotiations in London immediately preceding the grant eventually made to him a clear account is given in the following letters.

With a view to the application, he collected information of the extent to which the mule was used and of its effects upon the cotton industry in England, Scotland and Ireland, and on the basis of this information a

[1] Brown, *ibid.*, pp. 23-25.
[2] The whole matter is discussed at length by French, *ibid.*, ch. xii.
[3] French, *ibid.*, p. 158.

petition was prepared for presentation to Parliament.[1] To ensure its being influentially signed, Mr. Kennedy and Mr. Lee again exerted themselves whole-heartedly, and several references to the matter appear in the correspondence of M'Connel & Kennedy with their agent and customers in Scotland in the last days of 1811 and the first days of 1812.

When the 1803 subscription was launched the conditions were favourable, but the same cannot be said of this time. From the recommencement of the war in the spring of 1803, trade, at the best, had run an unsteady course. During the intervening period the Napoleonic decrees and the British Orders in Council had come into operation, and had created friction between this country and the United States, which, constantly growing more intense, led to retaliatory measures on the other side of the Atlantic, and in 1812 to war with England. Only in 1809 and in the early part of 1810 was there an active trade during the period, and this burst of activity followed upon a terrible period of distress in 1808, when, with the district in a state of insurrection, a petition signed by 50,000 persons was presented from Manchester, and another from Bolton signed by 30,000, praying that peace negotiations might be opened.

The succeeding trade boom is partly to be explained by a frenzy of speculative shipments to South America, and when it came to an end it was followed by a hurricane of bankruptcies which swept over England and Scotland, reached Ireland, and caused anxious concern in the United States. The situation, bad though it was in 1808, was even worse in the latter part of 1810 and in 1811 and during the greater part of 1812. In 1811, the Luddite risings began in the hosiery districts of Nottingham, Derby, and Leicester, and early in 1812 extended to Yorkshire, Lancashire, and Cheshire. In April of the latter year Manchester was in a state of rebellion. In one riot an attack was made upon the Exchange; in another, a few days later, upon the Shudehill market;

[1] Kennedy, *Brief Memoir of Samuel Crompton*, p. 322.

and, on both occasions, it was considered necessary to call out the military to deal with the rioters. In the Shudehill riot, however, force was supplemented by the fixing of a maximum price for potatoes, which had to be sold in small quantities.[1]

It was in such circumstances, not to mention the drain of a war which had continued almost uninterruptedly for nearly twenty years, that Crompton's petition was prepared and presented, and a grant of £5000 made to him. In view of the sums granted to others who had conferred benefits on the nation by their ingenuity, this amount was certainly paltry, but perhaps it should be placed to the credit of those concerned that his appeal received the attention it did.

The parliamentary proceedings extended from 5th March to 25th June. French states that Crompton proceeded to London in February, but, as his letters show, he was already there in the previous month.[2] It was not until 5th March that the matter came before the House of Commons, when the Chancellor of the Exchequer, by command of the Prince Regent, acquainted the House that His Royal Highness, having been informed of the contents of Crompton's petition, recommended it to the consideration of the House.

On this occasion no debate took place, nor evidently on any other until 24th June, when the grant was moved. On the first occasion the petition was referred to a Committee with power to send for persons, papers and records.[3] The next occasion was on 18th March, when the Committee was instructed to submit to the House minutes of evidence concerning the case, and any observations upon it. A striking comment upon the conditions of the time is that on the very same page of the *Journals* on which this record appears, there is also a

[1] *Transactions, Manchester Statistical Society*, 1917.
[2] French, *ibid.*, p. 166. *Infra*, p. 174.
[3] *Journals of the House of Commons*, lxvii., p. 175. Hansard, xxi., p. 1174.
[4] *J.H.C.*, lxvii., p. 207.

petition from Bolton—Crompton's home—pointing out that the people in that neighbourhood were "so nearly to actual starvation that they think it would be highly imprudent any longer to delay communicating their situation to the House"; that the manufacturers had been reduced to the necessity of working for one-fourth of what they obtained before the commencement of the war with France; and that the necessaries of life had nearly doubled in price. Convinced that the war was the immediate cause of their distress, they asked for parliamentary reform on the ground that "if the house consisted of representatives of the people only, it would not for any doubtful prospect of benefit to our allies consent to expose the people of this country to the certain misery, ruin, and starvation which the continuance of the war must bring upon them."

Certainly the Committee did not delay carrying out the order of the House in the matter of Crompton's petition, as the evidence was taken on the same day as the order was given.[1] Evidently some little "engineering" had taken place as a comparison of the evidence with the series of questions and answers prepared beforehand will show.[2] If the record of the proceedings is a correct account of what took place at the meeting, it is difficult to believe that the chairman and at least one witness had not the evidence already before them. On 24th March the Committee presented its report, when it was ordered to be printed and to lie on the table. Again, during the preceding four days, petitions had been presented from Blackburn and Preston, drawing attention to the parlous state of public affairs, and insisting that the lower classes had difficulty in obtaining a bare subsistence; that the middle classes were rapidly sinking to the position of the lower; and suggesting similar remedies to those of their fellow-petitioners at Bolton.[3]

So far as Parliament was concerned, Crompton's petition now lay in abeyance for three months, and his

[1] *J.H.C.*, lxvii., pp. 838-839. [2] *Infra.*, pp. 179-182, 189-191.
[3] Hansard, xxii. 94.

activity in keeping alive interest in it is described in his letter of 15th April,[1] at which time a state of insurrection prevailed in Manchester and in other places for miles around the town. On 11th May Mr. Perceval was assassinated, and shortly afterwards the Ministry, of which he had been the head, resigned, and it was not easy to form a new one. Crompton's case must have had influential support, otherwise it could hardly have been kept to the front in the confusion of these days. French evidently believed that the death of Mr. Perceval prevented Crompton obtaining a larger amount than that which was granted. This may have been so, but a perusal of Mr. Lee's letter does not give much ground for the belief.[2]

On 24th June the matter again came before the House of Commons, when Lord Stanley, who had been chairman of the Committee charged with the case, brought it forward, and in his speech repeated the arguments of the petition,[3] and ended by moving "That a sum not exceeding £5000 be granted to Mr. Crompton as a remuneration for his invention," which was formally seconded by Mr. Blackburne, and the Chancellor of the Exchequer expressed himself satisfied that this remuneration was deserved. The only other member who appears to have addressed the House on this occasion was Mr. D. Giddy, who, so far as his speech is recorded, expressed no definite opinion as to the adequacy of the grant, but suggested that, as he considered the case of a "transcendent" character, it should be made without fee or deduction. The resolution was then agreed to, and the following day was formally ratified.[4]

Throughout the proceedings Crompton had studiously refrained from expressing any opinion as to the sum to which he thought himself entitled, trusting rather to "British generosity" and "to the dignity of the giver

[1] *Infra*, pp. 192-194. Also in letters quoted by Brown, *ibid.*, pp. 35-38.
[2] French, *ibid.*, p. 189. *Infra*, p. 192. [3] *Infra*, p. 172.
[4] *J.H.C.*, lxvii., pp. 468, 476. Hansard, xxiii. 747-748.

and the merit of the receiver," but it is clear that he was bitterly disappointed with the amount of the grant.[1] It can hardly have come as a surprise to his friends, although it is equally clear that they thought that he ought to have received at least double the amount. The statement of Mr. Lee that "Crompton's plain appearance has been in his favour by inducing the members to suppose that he would be satisfied with a small grant and therefore they were willing to assist him" is significant both as regards gaining their support of a grant, and its amount, although it is hard to believe that the £10,000 which Mr. Lee thought reasonable would have roused much opposition.[2] Moreover, although the suggestion of Mr. Giddy that the £5000 should be paid without any fee or deduction was included in the final resolution, it appears that it was not strictly carried out, and that the sum Crompton actually received was considerably reduced by expenses.[3]

After the grant had been made, anxious to provide for his sons, Crompton embarked upon the bleaching business, with two of them as partners, at Over Darwen, four miles from Bolton. He also entered into a partnership with another son and with a Mr. Wylde, as cotton merchants and spinners, while with two other sons he continued his old business of spinning and manufacturing at Bolton.[4] As regards the bleaching concern, "the unfavourable state of the times, the inexperience and mismanagement of his sons, a bad situation, and a tedious lawsuit, conspired in a very short time to put an end to this establishment."[5] The business into which he had entered with his son and Mr. Wylde appears to have succeeded little better. After a considerable loss the partnership was dissolved, and Crompton's son, taking £1500 as his share of capital, set up in business on his own account at Oldham, which again was a failure. Even in the concern at Bolton there was disharmony,

[1] French, *ibid.*, pp. 188-189.
[2] *Infra.*, p. 192.
[3] French, *ibid.*, pp. 187-188.
[4] French, *ibid.*, pp. 196-198. *Infra*, pp. 176, 182.
[5] Kennedy, *ibid.*, p. 323.

and ultimately the sons left it and Crompton carried it on alone.[1]

By 1824, having then reached the age of seventy years, he was reduced to poverty. The end of his career is recorded by John Kennedy, and surely no one could have left a record based upon more intimate and sympathetic knowledge of Crompton's trials and achievements: "Messrs. Hicks & Rothwell, of Bolton, myself and some others, in that neighbourhood and in Manchester, had in 1824 recourse to a second subscription, to purchase a life annuity for him, which produced £63 per annum. The amount raised for this purpose was collected in small sums, from one to ten pounds, some of which were contributed by the Swiss and French spinners, who acknowledged his merits and pitied his misfortunes. At the same time his portrait was engraved for his benefit, and a few impressions were disposed of: he enjoyed this small annuity only two years. He died June 26th, 1825." [2]

In the year following that in which the annuity was purchased a movement, in which a Mr. J. Brown, of Bolton, was the prominent figure, was set on foot to bring Crompton's case again before Parliament, with a view to a second grant. The pamphlet, to which references have already been made, was written by Mr. Brown and published with extracts from Crompton's

[1] French, *ibid.*, pp. 199-200.

[2] Kennedy, *ibid.*, pp. 323-324. Messrs. Hicks & Rothwell along with men like Isaac and Benjamin Dobson, of the famous engineering firm, used to meet at "The Sign of the Black Horse" in Bolton, where they had formed a "prosecution" club in 1801. Crompton belonged to this club, his name appearing in 1810, and as a member of the Committee in 1819. The scheme of an annuity appears to have originated and have been carried through by this group of men along with Mr. Kennedy and others. The minutes of the club are preserved in the Chadwick Museum, Bolton. In Manchester also there was a "prosecution" society known by the name of "The Society for the Prosecution of Felons." In both cases the society appears to have come into existence to check the small thefts and the pilfering of materials used in the businesses of the members. *Cf.* Dobson, *Evolution of the Spinning Machine*, p. 115.

correspondence; a memorial was drawn up, which, according to French, was extensively signed by inhabitants of Bolton, the application for signatures being confined to that town, and in 1826 a petition was presented to Parliament.[1]

From French's account of the effort, it may be gathered that it aroused no widespread interest, and it is significant that when John Kennedy wrote his *Brief Memoir of Samuel Crompton* in 1830 he made no mention of it. Probably he thought, as one cannot help thinking at the present day, that it was unfortunate that the effort was made. It must have been apparent at that time, with Crompton well over seventy years of age, that a grant of a large sum of money would be of little use to him even had there been any possibility of an application being successful. Its only virtue was that it gave Parliament an opportunity of increasing the inadequate grant made in 1812. But, even as regards that grant, one is compelled to recognise that, had it been larger, it is unlikely, taking into account the peculiar difficulties with which Crompton had to contend, that his position in 1824 would have been very different from what it was. Instead of making a grant of a lump sum in 1812, the more suitable method of reward in Crompton's case and, as a general rule, in all such cases, would have been that of his friends twelve years later: to have granted him a suitable pension.

As already mentioned, Crompton died in the sixth month of 1827. When French published the first edition of his book in 1859, Crompton's memory was in danger of neglect, but, mainly owing to the interest thus aroused, the danger was averted, and when he published his third edition in 1862, a monument had been erected over Crompton's grave in the churchyard of his native parish,[2] and a statue was in course of preparation, the cost of both being defrayed by voluntary public subscription.

[1] French, *ibid.*, pp. 218-222.

[2] On 24th January 1861 (*A Chronological History of Bolton to 1875*).

The statue which stands in Nelson Square, Bolton, was unveiled on 24th September 1862, when an address was given by Mr. Henry Ashworth, cotton spinner,[1] in which he spoke of the effect of the inventions of Crompton and others upon the development of the cotton trade and upon the people of Bolton and Lancashire. On the same occasion "Mr. Rickson, pointing to Mr. John Crompton, the son of the inventor, who was seated by the side of the statue, expressed hope that they would not forget him, but would raise a subscription to place him above indigence for the remainder of his days."[2] Apparently something was done in this direction, as in the next month Lord Palmerston directed that a gratuity of £50 should be made to him, and it is a remarkable fact, in view of the conditions that prevailed when his father received his grant in 1812, that again, at this time, owing to the civil war in America, the distress in Bolton was so great that a public meeting had to be called to consider the situation, when a sum of £4000 was subscribed for relief.[3]

Another memorial of Crompton which the town of Bolton now possesses is Hall-i'-th'-Wood, where the idea of the mule took rise in the inventor's mind, and in 1779 assumed material form.[4] The Hall is outside the town and overlooks it, but at the present day, although the surrounding country has undergone such changes, it is not difficult to realise what it must have been one hundred and fifty years ago. The town was then known as Bolton-le-Moors, and in 1773 with Little Bolton and the Manor of Bolton contained 5339 inhabitants.[5] From

[1] Author of *The Cotton Trade of Lancashire* (1870) and other similar publications.

[2] Account of the ceremony at Hall-i'-th'-Wood.

[3] *Chronological History of Bolton*, 6th October 1862. See *infra*, p. 197.

[4] The place was purchased in 1899 by Mr. W. H. Lever (now Lord Leverhulme) and presented by him, with a sum of money for its restoration, to the Corporation of Bolton. It is now open to the public as a museum, and contains, among other interesting things, many Crompton relics.

[5] Aikin, *ibid.*, p. 261.

the centre of a sparsely populated country district, it has been transformed into the centre of the fine cotton spinning industry of England, and of the world. The town is now the county borough of Bolton, with a population approaching 200,000, and with the district, according to a recent return, contains one hundred and twelve firms engaged in the cotton industry, working nearly seven and a half million spindles, and over twenty-four thousand looms.[1] In its commercial organisation the town stands as a witness to the world economy which has come into existence; in its industrial organisation, as a witness to the existence of the factory system. It is these facts, with all that they imply, which form the most striking memorial to Crompton, who, as one among other outstanding figures of his day, played no small part in the development of which they are the expression.

Sufficient has been said in the previous chapter to indicate the place which Crompton's invention occupied in the development of the cotton industry during the latter years of the eighteenth and the early years of the nineteenth centuries. A striking thing was the rapid increase in the size of the machine, particularly after 1790. The first mule constructed by Crompton contained only 48 spindles; in 1795 the smallest mule made by M'Connel & Kennedy appears to have had 144 spindles. In February of that year a correspondent was informed "in respect to what number of spindles may be most profitable, it is difficult to fix, as what was thought best only two years ago is now thought too small. . . . We are now making from 180 to 288 spindles." Three months later, in reply to another correspondent, it was stated that most of the mules were then made to go by steam or water, and in the next year we find them supplying mules to work in pairs, the two containing 372 spindles. In 1799 they were making single mules with 300 spindles, and in the same year Dobson & Rothwell were making them with 408 spindles.[2] When Ure

[1] Bigwood, *Cotton* (1918), p. 185. The figures refer to 1916.
[2] Dobson, *ibid.*, p. 112.

published his *Cotton Manufacture* in 1836 the largest mules then in use apparently contained somewhat over 500 spindles. At the present day they are made to three times the size, a pair of mules containing 2000 to 2500 spindles being common.

But in addition to enlargement the mule as invented by Crompton has, of course, undergone vast improvements. As we have seen, movements originally performed by hand soon came to be performed by mechanical means, the culmination of this kind of improvement being reached in the invention of the "self-actor" mule.[1] Yet, notwithstanding these and other improvements, it can still be said that the fundamental motions of the mule remain the same as in Crompton's original machine.

For a time in the early part of the nineteenth century the mule came into use to such an extent that it appeared that it would entirely displace the water-frame. With the appearance of the "Throstle," which was really an important improvement in the water-frame, the tendency was somewhat checked, and later in the century with other improvements the supremacy of the mule was again challenged. Consequently the great rival of the mule at the present day in the world's cotton industry is the "Ring Spinning Frame," which may be regarded as standing in much the same relation to the original water-frame, as does the self-actor mule to the original mule. The following figures show the position in recent years:—

[1] It was not until the last quarter of the nineteenth century that the self-actor mule entirely displaced the hand-mule (Chapman, *ibid.*, pp. 69-70).

[TABLE

COTTON-SPINNING SPINDLES. SPINNERS' RETURNS, 31ST AUGUST IN EACH YEAR[1]

	Great Britain		All Countries including Great Britain	
	Mule Spindles in work as per Returns	Ring Spindles in work as per Returns	Mule Spindles in work as per Returns	Ring Spindles in work as per Returns
1910	40,101,083	7,987,430	65,051,239	54,421,786
1911	39,977,255	8,050,925	65,231,044	56,046,153
1912	39,848,727	8,885,218	65,311,070	61,426,062
1913	40,493,532	9,312,236	64,325,243	65,570,408

From these figures it will be seen that in Great Britain the mule still vastly predominates, and that in other countries the opposite is the case.[2] It is unnecessary to enumerate here the particular economic advantages of one machine compared with the other,[3] but in explanation of the international position it has to be borne in mind that, for spinning the higher qualities of yarn, the mule is superior to the ring-frame, also, that it is a much more complicated machine, and requires more highly skilled labour for its construction and operation.[4] As regards such labour, this country has been highly favoured compared with most of the other countries where the cotton industry is carried on. Even so, it appears that in British cotton mills ring-spindles are increasing at a greater rate than mule-spindles, and in the mills of other countries the fact is more pronounced. Whether the above figures represent a permanent tendency a longer period will be required to show, but, in any

[1] *Report of the Tenth International Cotton Congress*, pp. 591, 600, 610, 717.

[2] In this connection, of course, Great Britain really means the United Kingdom.

[3] They are discussed in Ellison, *Cotton Trade of Great Britain*, pp. 33-35.

[4] *Souvenir of Royal Visit to Bolton*, pp. 27-28.

case, it is certain that the development of the cotton industry during the past century and a half, particularly in the United Kingdom, cannot be fully understood apart from the service which has been rendered by the invention of Samuel Crompton.

CHAPTER VII

LETTERS OF SAMUEL CROMPTON

In view of what has been said in the last two chapters, the following letters explain themselves. The first has reference to the 1803 subscription, and the others to the parliamentary grant in 1812. As will be seen, four of the letters were sent in the first place to Crompton's family, and then, apparently, handed to Mr. Kennedy. The others, including the one from Mr. Lee, were addressed either to Mr. Kennedy or to the firm of M'Connel & Kennedy. The letters form a consecutive narrative, but in order to present a full account of the matter to which they refer, the petition to the House of Commons, and the evidence before the Committee appointed in connection with it, have been introduced in their appropriate places.

As Crompton did not pay much attention to punctuation, and was prone to abbreviate, a few stops have been introduced, and some abbreviated words printed in full; also a few words [in brackets] have been added. Otherwise the letters are printed as Crompton wrote them.

King Street, Bolton.
30 *Dec*^{r} 1802.

Gentlemen,

According to your request [I] have Applied to Several Gent^{n} in this neighbourhood who were personally concerned in, & Subscribers to the machine or Spinning wheele which I had made. I then lived at a place called Hall-oth-Wood & they went by that name here—with you they have the name of Mule.

About the year 1772 I Began to Endeavour to find out if possible a better Method of making Cotton Yarn than was then in Generall Use, being Grieved at the bad yarn I had to Weave. But, to be short, it took me Six years, that is till the year 1778, before I could make up my mind what plan to Adopt that would be equal to the task I hoped it would perform. It took from 1778 to 1779 to finish it. From 1779 to the beginning [of] 1780 I spun upon it for my own use both warp and weft. In the beginning of the year 1780 I Began to Spin only & left off Weaving.

In the end of 1780 it was made public & if any more particulars should be wanting I shall give them if necessary. [I] have applied to Messrs. Peter Ainsworth and Son, Mr. Jno. Pilkington, Mr. Fogg, Mr. Jas Carlile was not at home when I called.

Mr. Richd Ainsworth sugested, if you should agree, to alow a little more time before you published your Circular Letter, that is to apoint a meeting [1] next Tuesday but one, & he & others who are sincere friends to the cause would attend it, & in the meign time he would write to Sir Robert Peel, Mr. Jno. Horrocks, Mr. Wm Yates of Bury, Mr. Thos Ainsworth, who is now in London, —all of whom he is confident will be happy in the opertunity of joining you in the business. If you should Aprove of this Idea of Apointing a Meeting next Tuesday but one, you'l please to Write by return of post so that there may be time to acquaint those Gent^{n} of your kind purpose & also you'l please to name the time and place of the Meeting, but if not you'l please to write me, and those Gent^{n} that are at hand will give you their names by Letter and also every other Suport in their power.

I Remain Gent^{n}
Your Most Obedient Humble Servant
SAML. CROMPTON.

[1] . . . suggested, if you should agree, that a little more time should be allowed, before you published your circular letter, in order to call a meeting. . . .

On the blank sheet of the above letter there is a rough draft of one from Mr. Kennedy to Crompton, in which he advises him to get Mr. Pilkington and Mr. Ainsworth and any other neighbours he thinks proper to add their names to those of the persons who had already signed the circular letter "which is to show that you are the inventor." Afterwards, Mr. Kennedy explained, the circular letter would be printed, and sent to those who were likely to be friends to the cause, and those who had already promised their support would make their subscriptions, and call upon others to do the same.

To the MERCHANTS, MANUFACTURERS, COTTON SPINNERS, BLEACHERS, PRINTERS, &C., OF THESE UNITED KINGDOMS.

GENTLEMEN,

The Machine for Spining cotton so well known by the name of the Hall-oth-wood wheele, to which name succeded that of the Mule, is well known in this country to be my Invention, to complet which to my satisfaction cost me years of study and personall labour, and at the expence of every Shilling I had in the world, unaided by any one and unknown to all. At first I only spun on it occasionally (being a weaver), but I had not used it constantly more than Six Months before I was beset on every side by people of various descriptions from the distance of 60 Miles and upwards as well as my neighbours. So that in a few Months I saw that certain ruin was before me if I continued to work it, there were so many persons desirous to see the Machine. To prevent them I could not keep to my work, whose Curiosoty was excited by the superior quality and fineness of the yarn I spun hitherto unknown and which at that time the trade was much in want of. To destroy what had cost me so much labour and expence I could not think of, what to do I knew not. The principall men then in the trade made proposals to me that if I would let the machine be shown to the public they would make a liberall Subscription

to which I assented in preference to destroying it, and received by subscription only so much as built me a new one with 4 Spindles more than my first, as the book of subscription which I have by me will prove. At that time 1780 the cotton trade was in its infancy, and I dare affirm that its rapid Increase was owing under Divine Providence to this Invention. If I had destroyed, rather than give it up I do not hessitate to say this country would have lost that piece of Mechanism that has produced and increased one of the first Manufactories in Europe viz. the fine Muslin and cambric, and also the extention of many Sorts of cotton goods that were made in an inferior manner before, all of which would now have been lost to us without this Machine. In the year 1802 and 3 a number of liberall minded gentlemen at Manchester proposed for my aprobation to begin a subscription which was meant to extend not only to England but to Scotland and Ireland but the war breaking out at the time it was just begun at Manchester and its vicinity, and the difficulties consequent thereon prevented its progress and thitherto it has been dropt the promoters of which sent me what had been received viz betwixt 3 and 400 pounds it being part of what had been subscribed and for whose unsolicited generosity I shall ever feel thankfull, which sum I was requested to accept not [as] a remuneration but as an acknowledgment of the validity of my claim to the invention, So that I have yet to receive that recompence I have many thousand times been told within the last 30 years was my due. I am now geting into years and if ever I am to receive any compensation it cannot be much longer deferred. On a Moderate calculation the Invention has given employment for many years to thousands of Machine makers and Spinners, and perhaps to 50,000 Weavers and in the agregate reconing from the raw material not less than 300,000 Men, Women & Children, its extencive use has caused the increased growth and import of cotton to an immence extent to the great advantage of landowners, merchants, and planters.

In short it has been the cause of our cotton Manufactories being envied by, and unrivaled in the world. After appealing thus openly to the public which I now for the first time find myself disposed to do, and the present state of trade being such as to discourage any appeal or application to individuals I am desirous to prefer my claims to parliment which has been liberall on other occasions and which no doubt will give them due consideration, having the sanction of the principal people concerned in the trade who are proper whitnesses and judges of my right thereto. I therefore solicit such gentlemen who approve of my Intention and who think me entitled to a compensation to sign their names to this paper and they will have the gratefull acknowledgment of their

Humble Serv^{t}
SAML. CROMPTON.

BOLTON, *22nd April* 1811.

CERTIFICATE PRESENTED TO THE CHANCELLOR OF THE EXCHEQUER IN 1812, SIGNED BY COMMERCIAL FIRMS AND MANUFACTURERS:—[1]

We, the undersigned, being interested in the cotton manufacture, certify that we are perfectly satisfied with the correctness of the memorials prefixed, and are convinced of Mr. Samuel Crompton's just claim to public remuneration for the originality, utility, and extent of his improvement in cotton-spinning.

John Pilkington
Thomas Ridgway and Sons
Thomas Ainsworth and Co.
Peter Ainsworth and Son
Samuel Oldknow
M'Connel and Kennedy
Phillips and Lee
Greg and Ewart
Henry and John Barton and Co.
Arthur Clegg
William Douglas and Co.
William Jones
Nathaniel Gould
H. and W. Fielden
Richard Birley

[1] Brown, *The Basis of Mr. Samuel Crompton's Claims*, pp. 32-33.

To the Directors & Manufacturers Cotton Spinners Bleachers Printers &c
of these united Kingdoms

Gentlemen. The Machine for Spinning cotton so well known by the
name of the Mall oth wood wheele, to which name ..
succeeded that of the Mule. So well known in this country to be my Invention
& compleat which is my satisfaction cost me years of study and personal
labour, and at the expence of every Shilling I had in the world, unaided
by any one and unknown to all. At first I only spun on it occasionally
being a weaver & that I had not used it consistently More than six Months
before I was beset on every side by people of various descriptions
from the distance of 60. Miles and upwards as well as my neighbours
So that in a few Months I saw that certain ruin was before me if I
continued to work it, there were so many persons desirous to see the Machine
To prevent them I could not keep to my work, whose Excellency was caused
by the superior quality and fineness of the yarn I spun & therefore unknown
and which at that time the trade was much in want of, To destroy what had

Reduced Facsimile of Crompton's Handwriting (see p. 168)

Peter Marsland
James Robinson
A. and Geo. Murray
Birley and Hornby
James Kennedy
James Bateman
Robert Peel, Jun.
Peel, Yates and Co.
J. T. and G. Touchet and Co.
Thos. and John Drinkwater
The New Lanark Company
James and John M'Hewham
Henry Houldsworth
James Dunlop
R. Thompson and Sons
William Yates
William Fox
John Simpson
Horrocks and Co.
John Gladstone
John Forster
Ewart, Rutson and Co.
George Case
Thomas Earle
William Roscoe
James Finlay and Co.
William Stirling and Sons
Todd, Shorbridge and Co.
William and John Orr
For the Linwood Company, Andrew Brown.

PETITION PRESENTED TO THE HOUSE OF COMMONS, 5th March 1812.

A Petition of Samuel Crompton of Bolton-en-le-Moors, in the County of Lancaster, Cotton Spinner, being offered to be presented ;

Mr. Chancellor of the Exchequer, by command of His Royal Highness The Prince Regent, acquainted the House, that His Royal Highness, having been informed of the contents of the said Petition, recommends it to the consideration of the House.

Then the said Petition was brought up, and read ; setting forth, That, in the year 1769, Sir Richard Arkwright obtained a Patent for the use of a Machine by him invented for spinning Cotton, commonly called a Water Frame, the benefit of which invention he exclusively enjoyed during the full period of fourteen years, and derived great advantage therefrom ; and that the above Machine, although excellent for the purposes to which it could be applied, was exceedingly limited in its application, it being, from its construction, utterly incapable of spinning weft of any kind, or of producing

twist of very fine texture; and that, to remedy this defect, the Petitioner, in the year 1779, completed the discovery of a Machine, now called a Mule, but which for several years bore the name of the Hall of the Wood Wheel, from the name of the then place of residence of the Petitioner; and that the Petitioner's Machine not only removed the pre-existing defects in the art of spinning, by being capable of producing every then known description of weft as well as twist of a very superior quality, but gave birth to a new manufacture in this country of fine Cambrics and Muslins, by producing yarns of treble the fineness, and of a much more soft and pleasant texture, than any which had ever before been spun in Great Britain; and that the merit of the Petitioner's Machine soon brought it into general use, and has been the means of extending the Cotton manufacture to more than double the amount to which it was before carried on, whereby all persons employed in the Cotton manufactory, and the Public in general, have been greatly benefited; and that, notwithstanding the very great and numerous advantages derived by this country from the Petitioner's labours, the Petitioner has hitherto received no adequate reward for his discovery, the Petitioner having, in the first instance, been induced to give up his discovery to the Public by the solicitations of a great number of very respectable merchants and Manufacturers; and that the Petitioner stated his case to the Officers of His Majesty's Government, and was not able to obtain their determination thereon until the time limited by the House for receiving Petitions for Private Bills had elapsed: And praying, That leave may be given to present a Petition for such remuneration for his said discovery, and giving up the use thereof for the benefit of the Public, as may be deemed meet.

Ordered, That leave be given to present a Petition, as desired.

Then a Petition of the said Samuel Crompton was presented, and read; containing the like allegations as the last preceding Petition: And praying the House

to grant him such remuneration for his said discovery, and giving up the use thereof for the benefit of the Public, as may be deemed meet.

Ordered, That the said Petition be referred to a Committee:—And it is referred to the Lord Stanley, Mr. Blackburne, &c., And they are to meet To-morrow, in the Speaker's Chamber; and have Power to send for persons papers and records.[1]

SWAN, LAD LANE, LONDON.
23d Jany. 1812.

MESSRS. M'CONNELL & KENNEDY.
GENT^N^,

I take the Liberty of writing you and all enquiring friends that I yesterday left the memorial and Sketch of the petition as drawn up at Manchester and a letter from Lord Stanley at Mr. Sp. Percival's[2] Downing St, and also my address [but] have heard nothing since. Lord Stanley is attending for Collonel Stanley on the county business, he is very active in my case and neglects no opertunity of [approaching] the chancellor of the exchequer. He has wrote to him twice and twice [approached] him going into the house, but as there is only Lord and Collonel Stanley from the whole County of Lancaster that I know of in town I do not expect much to be done. Sir Robert Peel is not here and finding that his opinion is looked to by [the] government have wrote Wm. Yates Esqr. on the subject and expect an answer to morrow. I have to thank Mr. Ewart for his letter to Mr. Rennie who introduced me to one of the members his friend the only one yet in town, Collonel Stanley is confined to his Bed. He was a little Better yesterday and hopes he will soon be able to move about. I have nothing more particular except to Mr. Lee to inform him that I have not availed myself of Mr. Duck-

[1] *J.H.C.*, lxvii., p. 175.
[2] Crompton always spelled Mr. Perceval's name as in this letter.

worth's Letter to Mr. Jones as I found Coll. Stanley aproved a Mr. White who he said did for him all the County Business and who has appeared hitherto desirous that my buisness should not be subject to much expence. He is a very inteligent man and understands my buisness well, but like the Manchester people he says I must get hold of Sir Robert Peel. When he comes I shall not fail to try what can be done. [I] have call'd at his house twice and have been told he was expected tomorrow. If any thing further occurs I will not fail to write some of my friends and you will please shew this to any one you may think proper.

I am Gent^{n}.
your Most
Obdt. Ser^{t},
SAML. CROMPTON.

P.S. My son George will probably be in Manchester on Saturday, you will find him in Whites Court, M'Donalds Lane, the firm is Wright & Crompton. If you shew him this it will much oblidge. I have not heard from any one since I left home but hope they are all well.

February 14, 1812 (*postmark*).

MR. JOHN KENNEDY, MANCH^{R}.
SIR,

Yours of the 11th I have just now received [but] will defer all thanks and acknowledgments till I see you. I am just now returned from Mr. Percival's Downing St. Mr. Blackburn went with me & we met there by appointment at twelve o'clock Sir Robt Peel, Lord Stanley, Mr. Horrocks, & Mr. Houston, and had an audience of more than an hour. I can only say that all present that went on my acct. used every argument in their power to induce Mr. P. to think favourably on the subject. He said he had perused the Memorial and the petition with particular attention before we were

admitted and did not appear hostile to it. I can only add that he promised Mr. Blackburn to give him an answer on Monday next. Whatever is the result you may rely uppon it I shall be satisfied, and must say that if the Memorial Sanctioned as [it] was & the petition in the state I brought with me from Manch^{r} and the gent^{n} that went with me is not sufficient to engage the attention of [the] Government I know not what is, and must also say that it is of no use to pursue it any further. In regard to what sum to ask I beg you will set your mind at rest, you may depend uppon it I never shall ask any sum, what I ask for is a candid and full statement of my case, and an apeal to Brittish generosoty, I remain,

Dear sir, Yours most
Respectfully
Saml. Crompton.

My best respects to all friends and will write some of them when any thing occurs worth your notice. I hope they are all well.

London, Lad Lane,
21 *Feby.* 1812.

Dear Children,

Yours of the 15th I duly recd and am very happy to hear that George is recovered and that you are all well, and I find myself much better than I was at first. I intend this day to call on Mr. Lever to repeat what I aplied for before. A week to day since I wrote Messrs. M'Connell & Kennedy perhaps they have shewn it you. On Monday last Mr. Blackburn applied to Mr. Percival for his answer promised, which had been forgot on Tuesday [and] he got his consent for the petition to be brought in. On Wednesday Mr. B. got it back from Mr. Percival's office and on Thursday Lord Stanley wrote Mr. Percival and has this day got a written answer from Mr. Percival. I yesterday morning waited on Sir R. Peel whose kindness I must ever remember in reviewing

the petition, before I went to Lord Stanley by appointment made the night before at the House of Commons. I was with him two hours. I this day have been with [him] an hour, he is determined to bring it in. As he had to Introduce it to the Minister, you see what progress I am making and if but slow I now think I shall get a hearing and if the letters I have written to my numerous friends are preserved I perhaps might remember many things which otherwise I may forget. I am very happy to find Mr. T. Ainsworth is here I supt with him last night. If I had Duncan's Art of Weaving it would be of some service. I lent it Mr. T. Ainsworth some time back. I believe it is not returned but you [can] easyly get it, and if you send [it] by some friend that may be coming you know how to direct it. You will shew this on Tuesday to some of my Manchester friends and give my best respects to them and all enquiring friends. Mr. Haire is here and [I] will send by him Mr. Davy's catalogue which Jas. Rushton wanted. You also may inform J. Seddon I have seen Mrs. Cook. She now lives at Clapham Common, Surry. She informs me that all the accts. were sent to her sister at Liverpool. You will not shew this to any but the Manch^r Gent^n and either them or you shall hear from me when I have any thing to write. In hopes that this will find them and you all well I still remain

Your Affectionate father,

SAML. CROMPTON.

SWAN, LAD LANE,
28 *Feby.* 1812.

DEAR CHILDREN,

I last night recd the book and a letter from William [1] per favour of Mr. Morris who slept here last night. We sat up till late. I am happy to hear you are all well. I, the night before yesterday, recd the petition from Mr. White as it is intended to be presented and

[1] Crompton's son.

reading it at home I signed it and as directed I took it Lord Stanley yesterday who said he would see me at the house, where I waited till after 7 o'clock and he not appearing, I went home. Yesterday Mr. T. Ainsworth and I paid a visit to Lord Stanley & Collonell Stanley who is yet confined, they both recd our visit very kindly. I this Morning called on Mr. T. A. who is coming down to night by the Mail, and offered to carry me a letter or render me any service he could. I am now 3 o'clock returned from Mr. White's office Westminster Hall where I went by appointment made last night. My intent was to give him a good drilling as I expect to have to depend on him greatly, and will say I think him a most excellent schollar. You will shew this my friends at Manchester and as I mean to write some of them in a few days concerning evidence & any thing else which may occur, I remain always remembering you with sincere respect,

SAML. CROMPTON.

The following letter is undated, and as it was sent by a Mr. Willoughby, it contains no postmark. It is evident from its contents, however, that it is here given in its correct chronological order.

[MR. JOHN KENNEDY.]
SIR,

You I trust will have heard that Mr. S. Horrocks, and T. Ainsworth are both gone down to Lancashire, and both expect to be here again about the middle of next month. There are a great many members not yet arived that we could wish to see before the buisness is brought forward. The petition is lying with Lord Stanley who has Mr. Percival's written consent to receive the petition, and in its present form the claim must be made out by evidence. I prevailed on Mr. Ainsworth while he was here to write out a number of questions with their answers according to his own view of the subject, which I will subjoin if my paper will contain

them, and as I must have evidence, I also must be prepared where to find [it] at an appointed time of which I can have any Sufficent notice [for] Mr. T. Ainsworth from Bolton, one or two from Manchester and one from Glasgow and also one [from] Ireland if any such could be found. I presume the whole of the evidence would be gone through in one day or two and if my Manchester friends can find me one or two on whom I can rely on at the time appointed, it would add greatly to the number of obligations that have been received from them by their Humble Servant

SAML. CROMPTON.

Coppy of T. A.'s Questions and Answers

How long have you been conversant in the Cotton Trade of the County of Lancaster ? Near 40 years.

Can you speak as to the extent of the cotton trade 30 years ago comparatively to what it is at present ? In proportion of 20 for 1.

To what do you in a great measure impute this rapid increase of this trade ? To the invention of Machinery and most particularly that used in Spinning.

To what invention in Spinning Machinery do you most particularly allude ? First to Mr. Arkwright's for which he obtained a patent and made an immence fortune, next to his, Mr. Crompton's which may be called an invention though it had the aid of some parts of Mr. Arkwright's.

Can you describe the principals of Mr. Ark's Machine and the effects it is calculated to produce ? The thread in Mr. A's was made in the rollers only, and the twist from the spindle [was] given by a bobbin and fly which compelled a hard thread fit only for warp.

Wherein does Mr. Crompton's Machine differ ? The fineness of the thread may either all, or in part, be made in the Rollers the twist is given from the Spindle without the use of bobbin and fly, it may be made hard for warp superior to any thing that can be produced by Mr. A's

Machine, or it may be made soft for weft which Mr. A's cannot at all produce.

Had Mr. C's Machine been introduced before Mr. A's would it alone have answered the demands of the trade? I think we could at this moment entirely do without Mr. A's machine having Mr Crompton's.

Had the trade been without Mr. C's machine could the Manufactory have gone on to the extent it is? If at this moment Mr. C's machine could be taken from the trade one half of the Trade would be lost with it. What proportion of the trade do you suppose the invention of Mr. C. has given rise unto? I think more than one half I believe ⅔ds of the piece goods Manufactory.

What branch of the piece goods Manufactory? Particularly every branch but almost intirely Muslins, Cambrics and all fine fabrics. To the Scotch fancy Manufactury which is the most valuable in the Kingdom intirely.

How do you make out the Scotch Manufy. to be valuable beyond the other parts of the cotton trade? Because the raw material imported of which the fabric consists is not more than 5 p. ct. of its value when sent again abroad, as I may state that the raw material costing 20s. is by the labour of this country made of the value of 20£.

And do you impute this branch of trade to the merrits of Mr. C's Invention? I so far impute it to this cause that I cannot conceive how it could ever have been carried on without it.

Would not Mr. Arkwright's Machine have supplied this trade? In no sort of proportion perhaps not as one to six.

Was not this fancy trade in Scotland supplied before the invention of fine spinning with linnen yarn? I believe it was from the continent, perhaps the linnen imported might cost 10£ and by the Scotch manufactory be made worth 20£ but even this Trade bore no proportion in extent, and at this moment would have been nearly lost for want of Material.

Is there no other Machine calculated for fine yarns? Is there not one called a Jenny? The Jenny is the oldest of all the Machines after one spindle but any merrit it possesses is mostly borrowed from Mr. Crompton's and in that improved state it is not calculated but for low good waste, etc.[1]

Have you any certain Knowledge that what is now called the mule is the same in principal as the Hall-oth-Wood Machine and that it was the sole invention of S. Crompton? Yes no other person ever laid claim to it, it was so admitted at the time, and a small subscription raised. It has the sanction of the whole trade and there is not a shadow of a doubt entertained.

How many people does this Machine now employ? In spinning only, perhaps 70,000, in weaving and all that follows, 150,000 but the work it produces if it was possible for single hand wheeles to produce the article as in the East Indies it would take 3 or 4 millions to spin only.

If the trade of Lancashire has received such advantages from it should not the individuals in the trade made the remuneration?

The county of Lancashire and other counties have got a deal of employ through it, but the country in generall has had the real benefit. It has brought Millions into the exchequer, it has increased the trade of Merchants immensely, it has increased the value of the landed property, of course, and I think it fit and right where it has given Wealth there is the most proper place to apply for remuneration. If Mr. Crompton had only a Bankers commision upon what (in my humble opinion) has gone into the exchequer, created as it were by his invention, he would be a very rich man.

What is your opinion as to remuneration? My opinion is that a great nation should act in its own character and not do a little thing in reward for great services nor measure its bounty either by the wants or

[1] In the margin opposite this answer the words "The Billy" are written. *Ante*, p. 123.

expectations of the recipient, but weigh it solely by the dignity of the giver and the Merrit of the receiver.

P.S. You will see that the above is the spontaneous production of the Moment, and the person or persons if you can find any that will volunteer on this occasion ([with] every part of which I flatter myself you are acquainted) with volunteer evidence, will be much stronger than any forced one, and in my opinion every [witness] should be provided with a set of questions which he feels himself best able to answer, and indeed with any other which some other [witness] may be better calculated to answer than himself, which would be our case to select and propose them before the Committe.[1]

S. C.

LAD LANE,
6 *March*, 1812.

DEAR CHILDREN,

I last night wrote Mr. T. Ainsworth of which he can inform you. I have also this day writen to Mr. Lee, who I have informed that I would write you and request that you on receipt of this will go to Mr. T. Ainsworth and request him to say when he can come up as the Petition is presented and a Committe appointed, who will sit where we are prepared to meet them. Mr. Blackburn is very desirous that the report may be made before the Easter Holliday. You will then immediatly let Mr. Lee know who will I trust be able to write me so that I may give notice to the committe of the time we are prepared to meet them. I should feel very happy if Rich. Ainsworth, Esq, would volunteer to give evidence as a Bleacher. You will leave the proposing of it to T. Ainsworth if he thinks it proper. I have nothing further at present to add but that I hope

[1] A comparison of these questions and answers with the evidence given by Mr. Ainsworth before the Committee, which sat some time later, will show that one is largely a repetition of the other.

you are all well and that you will immediatly attend to the above and lose no time in order that we may if possible go into the committe on Thursday next.

I am as ever yours Most Affectiony,
SAML. CROMPTON.

P.S. I should be glad to hear from you and also that you will inform me as I have not the means here that you have of informing me of the name of the gentleman and the sum he obtained from the Government of this Country who first introduced the Machine from abroad for the Silk Throwing Machine in the Silk Manufacture and the amount of the Support he received from the government of this Country. If I remember right you will find it either in England Described, or Guthrie's Geography and that the Machine was first erected either at Derby or Nottingham.

S. C.

The above letter was evidently handed to Mr. Kennedy with the following note added by Crompton's son:—

SIR,

We have this day waited on Mr. Thos. Ainsworth who cannot possibly go to London this week but he has wrote to his son in London who will inform my father when T. A. will be in town. Mr. Rich. Ainsworth is confined with the gout and could not possibly go but at the hazard of his Life. We will one of us come over to Manchester on Monday and call on you if possible.

I remain for Self & Brother
Your Obdt. St.
GEO. CROMPTON.

BOLTON, *March 8th*, 1812.

LAD LANE,
7 *March* 1812.

DEAR CHILDREN,

I wrote you yesterday which I hope you duly recd. and that you understand what I meant and hope

you have immediately attended to it. I first this morning attended on Richd. Ainsworth who was then reading a letter from his father who expected to be here in course of next week. T. Ainsworth knows and I trust my Manchester friends do also, that Committes sit neither on Saterday nor Sundays of course. I flatter myself the evidence will be got through in two sittings so that if it should be found that we cannot give timely notice to the committe for Thursday next I hope we shall be able to say Monday next. I then went to J. Blackburn, Esqr, who said he was fully satisfied with every step I had taken. You will show this to Mr. Thos. Ainsworth and act according as he advices. Since writing the above I have been with Sir Robt Peel. I have shewn him Mr. Lee's letter [and] he seems to think the buisness of the committe will be got through very soon. I think that notice should be given to the committe at least two days before the time. But of this T. Ainsworth can speak to. I subjoin a list of the committe

Lord Stanley
Collonel Stanley.
J. Blackburn.
Sir Robt. Peel.
Richd. Sharp.
A. Houston.
D. Giddy.
Rt. Honble. Sp. Percival.
Rt. Honble. Geo. Rose.
J. Hodson.
Saml. Horrocks.
Peter Patten.
W. Wilberforce.
Lord Milton.
D. Davenport.
Wilbraham Bootle.
Genl. Gascoigne.
Sir Jas. Graham.
Gen. Tarleton.
Lord A. Hamilton.
A. Spir.

I will only add that if those that come could furnish themselves with a few samples of spinning (as those I have with me are much defaced having carried them so long) to shew to those of the committe that are as yet unacquainted with the case in hand it might be of some service. But [I] will leave all this to their better judgment, the samples I have are 1, 3, 210 and 310. I hope you will lose no time in attending to what T. A. advises,

as I am not aware there will be much more need of anything further but what must be done here after the evidence is given so as the report can be made.

Hoping you are all well and each attending to his post, I remain, your Most respectfully.

SAML. CROMPTON.

P.S. It would perhaps be of some use if some Acct. could be given how much the Machine is used in and has improved the woollen Manufacture, though it may not be essentiall.

REPORT FROM THE COMMITTEE ON THE PETITION OF SAMUEL CROMPTON OF BOLTON-EN-LE-MOORS, IN THE COUNTY OF LANCASTER, COTTON SPINNER.

The COMMITTEE to whom the Petition of Samuel Crompton, of Bolton-en-le-Moors in the county of Lancaster, Cotton Spinner, was referred: and who were empowered to report their Observations thereupon to the House, and also the Minutes of the Evidence taken before them;—Have, pursuant to the Order of the House, examined the matter of the said Petition; and have agreed upon the following REPORT:

YOUR Committee have called before them several Witnesses, whose Evidence they have hereunto subjoined, and beg leave to state, that from the Evidence so adduced before them, it appears to Your Committee the Petitioner has fully proved his Claim as to the discovery of the machine called "The Mule," described in the said Petition; and that it also appeared from the said Evidence that the Public have for a long course of years derived great and extensive benefit from the use of the said Machine, but that the Petitioner had derived little or no advantage therefrom; in consequence of which Your Committee beg leave to observe, that the Petitioner appears to them to be highly deserving of a National Reward.

MINUTES OF EVIDENCE

COMMITTEE *on the petition of* MR. SAMUEL CROMPTON.[1]

Mercurii, 18° *die Martij*, 1812,
THE LORD STANLEY *in the Chair.*

SIR ROBERT PEEL a Member of the Committee, stated,

That in the year 1769, Sir Richard Arkwright obtained a Patent for the use of a Machine by him invented, for spinning cotton, commonly called a Water Frame, the benefit of which invention he exclusively enjoyed during the full period of fourteen years, and derived great advantage therefrom; and the above Machine, although excellent for purposes to which it could be applied, was exceedingly limited in its application, it being, from its construction, utterly incapable of spinning weft of any kind, or of producing twist of very fine texture.

MR. JOHN PILKINGTON, *Merchant and Manufacturer at Bolton; called in, and Examined.*

At what period were you first acquainted with Mr. Crompton's Machine?—I did not see it till the year 1780, when the yarn produced by Mr. Crompton from his Machine drew the attention of the Cotton Manufacturers. At that time I went to Mr. Crompton's house, and I saw his Machine: soon after which I drew up a paper with a view to obtain for Mr. Crompton a reward for making public his invention, by a subscription amongst the Manufacturers; but the amount of which subscription proved very inadequate to my expectations and my opinion of his deserts.

Has Mr. Crompton's invention produced any material improvement and extension in the cotton manufacture?—Previous to the invention of Mr. Crompton's Machine, the muslin manufacture had been attempted, but without success; since that period it has been progressively

[1] *J.H.C.*, lxvii., pp. 838-839.

advancing, and at present I believe the major part of the cotton cloth manufactured in this kingdom is spun upon the Machine invented by Mr. Crompton.

In consequence of drawing up that paper, and your commencing a subscription for Mr. Crompton, upon the faith of that subscription being adequate to its merits and his expectation, did he permit his invention to be made public ?—It was I think in expectation of a much larger reward than he obtained, that Mr. Crompton permitted myself and some others to see his Machine ; but I saw it in confidence before the subscription was entered into.

Did Mr. Crompton allow his invention to be made public in consequence of that subscription ?—Yes, but which subscription he did not know the amount of, at the time he allowed his invention to be made public ; and that subscription, it afterwards appeared, fell infinitely short of his and my expectations.

Do you recollect the amount of that subscription ?—About £106.

Do you think the sum of money Mr. Crompton has received at different times, in any degree adequate to the utility of the invention, or to the expectations entertained ?—Certainly not.

MR. GEORGE LEE, *Cotton Spinner, of the House of Phillips and Lee, of Manchester ; called in, and Examined.*

Does the Machine invented by Mr. Crompton produce yarn superior in fineness and quality to any other machine ?—It does.

Could yarns adapted to cotton, cambrics, and muslins, be spun equal in quality or cheapness by any other machine ?—They could not.

Is Mr. Crompton's Machine in general use ?—In very extensive and general use.

To what extent is Mr. Crompton's Machine used ?—From the most exact calculation which I have been able to obtain, there are four millions of spindles upon Mr. Crompton's principle.

How many persons are employed directly in working machinery upon Mr. Crompton's principle ?—There cannot be less than seventy thousand directly.

What quantity of cotton wool is spun by Mules annually ?—About forty millions of pounds.

What would be the amount of duty paid to Government upon the same materials spun by Mules ?—About three hundred and fifty thousand pounds annually.

What is the amount of wages paid for spinning by Mules, compared with all other machinery for that purpose ?—Double the amount in wages is paid for spinning by Mr. Crompton's Machine to that by all other machines for cotton spinning.

Do you mean that two-thirds of the cotton spinning is upon the principle of Mr Crompton's invention ?—I do.

Has the cost of yarns, and consequently of cotton cloth, been materially diminished by Mr. Crompton's invention ?—Very materially indeed.

Are you aware of the circumstances relative to a subscription that was entered into ?—Yes, in the year 1800 or 1801, a number of gentlemen, thinking Mr. Crompton had been neglected, agreed to solicit subscriptions, for the purpose of making him a liberal remuneration: I attended with those gentlemen, and applied amongst others to Mr. Arkwright; Mr. Arkwright's answer was, that he would contribute to it cheerfully, candidly acknowledging the merit of the invention, and at the same time observing that Mr. Crompton had been his most bitter rival, for that he had superseded the Machine of his father's invention, in the finer yarns; and he subscribed thirty guineas. We collected only about £400; we expected to have got a much greater sum; but in consequence of the distresses from the war breaking out, we found the result of our applications very inadequate to our expectations and his deserts. From the difficulty of collecting even what had been subscribed, and still more of obtaining any addition to it, we discontinued our applications. The money which

was collected was paid to Mr. Crompton, not amounting in the whole to £500, I believe.

Was that subscription commenced in consequence of any solicitation from Mr. Crompton?—No, it was spontaneous on our part, entirely from a sense of his just claim upon the public.

MR. JAMES WATT, *of the House of Boulton, Watt & Company, of Birmingham; called in, and Examined.*

Have you erected many Steam Englnes for turning machinery upon Mr. Crompton's principle?—A considerable number; I conceive about two-thirds of the power of steam engines we have erected for spinning cotton, has been applied to turning spindles upon Mr. Crompton's construction.

MR. THOMAS AINSWORTH, *of the House of Ainsworth & Company, of Bolton; called in, and Examined.*

How long have you been conversant with the cotton trade in the county of Lancaster?—About thirty-seven years.

Can you speak as to the extent of the cotton trade thirty years ago, compared with what it is at present?—I think it is increased in proportion as twenty to one.

To what do you, in a great measure, attribute this rapid increase of the trade?—To the invention of machinery, and most particularly that used in spinning.

To what invention in spinning-machinery do you most particularly allude?—The first kind of machine beyond the one-spindle wheel was what was called a Jenny; the next was Mr. Arkwright's, for which he obtained a patent; and the next was Mr. Crompton's.

To which of those do you most particularly allude, as imputing to it the rapid increase of the trade; or do you impute it to them altogether?—There was a progressive increase; first by the Jenny, and then by Mr. Arkwright's invention; but the great increase, and

that which accomplished the main object, was Mr. Crompton's.

Can you describe the principle of Mr. Arkwright's Machine, and the effect it is calculated to produce ?—The thread of Mr. Arkwright's Machine is made through rollers only, and twisted up to the rollers, which compels a hard thread and fit only for warps.

Wherein does Mr. Crompton's Machine differ ?—Mr. Crompton's Machine consists of rollers, in which the thread is drawn ; but after the rollers have done delivering the thread, he can accommodate it either to warp or woof.

What proportion of the present trade do you suppose the invention of Mr. Crompton has given rise to ?—Full one half ; I think two-thirds.

To what branch of the piece-goods manufactured, particularly ?—To the fine fabrics, cambricks and muslins, particularly the Scotch manufactory.

How do you make out its value, as applied to the Scotch manufacture, beyond the other parts of the cotton trade ?—By being of so very fine a fabric, such fine yarns being wanted for that manufacture beyond what would be wanted for the heavy cloth we manufacture in Lancashire. I do not know how the Scotch manufacture would ever have been carried on without the yarn Mr. Crompton's Machine produces, particularly book muslins.

You impute that branch of trade to the merit of Mr. Crompton's invention ?—In a great measure ; I think the Scotch trade is in a great measure beholden to Mr. Crompton's invention.

Would not Mr. Arkwright's Machine have supplied that trade ?—In a very limited and a very inferior way indeed, and only for the coarser fabrics ; the quality of the yarn that composes a great part of the Scotch manufacture could not have been produced without Mr. Crompton's invention.

Have you any certain knowledge that what is now called the Mule is the same in principle as the Hall of the

Wood Machine, and that it was the sole invention of Mr. Crompton? It was generally admitted so to be at the time, and a subscription was entered into to reward him for it. The principle is the same, certainly.

How many people does this Machine now employ?—I believe, by calculation, about 70,000, and it is supposed about 150,000 weavers.

Do you conceive Mr. Crompton to have received an adequate recompense from the public for this invention? —No, I think it falls far short indeed.

You have said, that the Mule spins a finer kind of yarn than the other machinery, and enables the manufacturer to make a finer species of goods than could have been otherwise made?—Yes.

Is there a greater number of Weavers employed in consequence of that, than would otherwise have been employed?—A very considerable number.

MR. JOSEPH RIDGEWAY, *of the House of Thomas Ridgeway & Son, near Bolton; called in, and Examined.*

Have the cotton cloths bleached by you, and spun by Mules, been increasing in quality during the last twenty years?—Very much.

What proportion do they constitute of the whole quantity sent to you to be bleached?—At least four fifths.

Jovis, 19° die Martij, 1812.

THE LORD STANLEY *in the Chair.*

MR. GEORGE LEE *again called in, and Examined.*

What do you suppose is the value of the machinery, buildings, and power engaged in spinning, upon Mr. Crompton's principle?—Between three and four millions sterling.

London, 21 *March* 1812.

Dear Sirs,

We compleated our Evidence on Thursday—the Committee were very favourably disposed—but Sir R. Peel & Mr. Houston intimated to me that there was an implied Condition with Mr. Percival that the Sum should be very moderate before he would listen to them. I ask'd him how much & he said two thousand pounds at which I expressed great Surprize & Disappointment and as soon as the Evidence was completed so that they could not soften it down, as they had the Petition, by expunging the most material points, viz. the actual Benefit & Amount of Machinery, Wages, Cotton & Duty, I told Sir Robert everybody in Lancashire would think such a Sum inadequate; he then asked me if I had the public Purse what I would give. I answered not less than Ten thousand & double that if he had not stated so many discouraging Circumstances.

The fact is Crompton's plain appearance has been in his favour by inducing the Members to suppose he would be satisfied with a small sum & therefore they were willing to assist him. His Claim to national Honour & Interest must now be pressed upon them as they cannot recede & there is no Risque I believe of the Bill [not] passing and it must obtain better terms.

I thought a few hurried Lines would be acceptable from

Yrs sincerely,

G. A. Lee.

Kensington, 15 *Apl.* 1812.

Messrs. M'Connell & Kennedy.

Gent^{n},

I once more take the liberty to write you and though I have not yet any thing finally conclusive, yet I can inform you what state the buisness which brought me here stands in. During the hollidays there was nothing done and last week Lord Stanley, Sir Rt

Peel and many others were out of town so that nothing was done. Sir Rt P. came on Saterday and he sent a servant to acquaint me. I had wrote him at Tamworth last week. I also wrote the Chancellor of the Exchequer. Mr. Blackburn on seeing it insisted on sealing it and that I should Immediately carry it to the office. On Monday Morning I determined to try to Move on. I first went to Sir Rt Peel and found [him] at home and took his advice. I then went to Lord Stanley's but too early. I then went to Mr Blackburn's then back to Lord Stanley's from there to Mr. Horrocks's & then to Lad Lane & Sir R.'s warehouse, from there to Westminster, stopt 3 hours there and spoke to many members and then came here after that. This is one day's ramble and I only relate it that you form some little Idea what it is if ever you undertake a piece of business the means of executing which may lay scattered over this over grown place. Since I came here I have recovered my health for which I feel very thankfull. Lord Stanley, Sir Rt Peel, T. Blackburn, Mr. Percival, Mr. D. Giddy, & many others say they are very desirous to bring it to issue very soon and the only point now is in what form to bring it before the House. Mr. Percival finds some Difficulty in putting it in what is called the apropriation act, there having been complaints made against that plan of proceeding though it is done without expence. They have all promised it shall not sleep untill it is in train to be finished. If it is by bill Sir Robt. says it will be necessary to have the same evidence to appear before the House of Lords as has been to the Commons. I believe their intention is to device some plan to do without bill if possible, both to save time and expence, but as this is a part I cannot act in, it being gone out of my reach, yet I can talk about it and the moment I know any thing certain I will write some of my friends who I hope are all well and please to give my best respects to all inquiring friends. I yesterday had a ramble about the same as Monday and came from the house with Mr. Blackburn who was going to Lord Derby's to

meet a party some of which interest themselves much in my case. Whether opertunity would he had to bring it before the company he could not say but he would not neglect if opertunity offered. I am as ever Gent[n]

Your Much oblidged
Humble Servant,
SAML. CROMPTON.

P.S. You will please shew this Mr. Lee, Mr. Ewart, and any other you may think proper.

ADDITIONAL NOTES

Page 10, *note* 1.—In connection with the petition quoted by Mr. Price the question arises as to how nearly it fixes the exact date of the beginning of the fustian manufacture in England. The most definite statement on the question the petition contains is the "20 years past" since the trade was "found out" which, as Mr. Price mentions, would fix the date about the opening year of the seventeenth century. Moreover, this date seems to be a reliable one, owing to the fact that the petitioners mention a patent granted in 1594 for sealing "all sorts of new draperies" in which they imply that fustians made partly of cotton were not included. According to their statement it would appear that such fustians were not brought within the scope of a patent until 1613.

From the following quotation, however, it appears that fustians were included in a patent granted in 1594: "Patent to the Alnagers for sealing cloth from Midsummer 1594, to search and seal and exact duties on all the new draperies as French serges, worsteds, fustians, blankets, etc., made in England chiefly by strangers, which have hitherto been exported free, no officers being appointed to search them, and to seal such as are good and merchantable ware, and cut the ends of those that are not; also settling the subsidies to be paid thereon, which are granted to the patentees on payment of £66, 13s. 4d., yearly giving them the right of search, also a writ of assistance therein" (*S.P.D. Eliz.*, vol. ccxlix. 20). Assuming that the fustians here mentioned were similar to those referred to in the petition, it would appear that goods made partly of cotton were manufactured in England in 1594, and that they had gained sufficient prominence to be brought under supervision.

Support for this view may be found in some observations made in 1606, upon an Act for the alnage of narrow draperies (*S.P.D. Add.*, vol. xxxviii. 104). These observations are interesting not only as regards fustians but also in the indication given of the application of the old type of regulations to new kinds of goods. In justification of the Act the following among other reasons were set forth: That it was based on the statutes for woollen manufactures, the reasons moving it and the offences committed being of the same nature. Also upon necessity because since the trades of making stuffs began, vices had crept in which were causing the trades to decay. Also upon the interest of the Crown and upon the right of His Majesty to take fees, "for as he is by statutes interested in the alnage and subsidy of woollen goods—there being at the time of making the same statutes no other stuffs made in England—he should take like

alnage and subsidy of things made within this realm as his predecessors." That the increased price per piece would not be more than 3d. at the most; and that fustian weavers for themselves had been petitioners to Her late Majesty for reformation of abuses committed amongst them.

The reference to the fustian-weavers certainly suggests that fustians would be included among the stuffs other than woollens, and if so there can be little doubt that they were of the same character as those to which the petition quoted by Mr. Price refers. Moreover, if the fustian-weavers had reached a stage in the reign of Elizabeth—even in the last year of her reign—when they could petition for reformation of abuses, it is not unreasonable to suppose that a fustian-manufacture would have commenced in 1594, and that the fabrics produced were included in the patent granted to the Alnagers in that year.

Even this does not fix the date when the manufacture began, but earlier dependable evidence is difficult to find. Before the end of the sixteenth century two statutes had been passed relating to fustians, but in the first, which appeared in 1495-1496 (11 Hen. VII., c. 27), it was definitely stated that they were imported, although they were sheared in this country. The statute also makes clear that the fustians were at least composed partly of cotton. The second appeared in 1597-1598 (39 Eliz., c. 11) and was a continuance of the first. In this statute no mention was made of the fustians being imported, nor was it stated that they were manufactured in this country, but the weaving of fustians was said to have "lately grown to more use than ever it was before time." This statement, and the fact that it was thought advisable to re-enact the statute, may reasonably be taken to support the view that, in the nineties of the sixteenth century, a manufacture of fustians had commenced in England.

One other fact worth notice is that when a fustian manufacture had certainly become established in the Manchester district much of the linen-yarn used was imported from Ireland. This trade, however, was carried on as early as 1543 (*ante*, p. 30), and a conjecture is raised as to whether fustians may not have been made in the Manchester district at that time, but under another name. In the *Victoria County History of Lancashire*, ii., p. 296, it is stated that "the manufacture of 'fustians' a mixture of wool and linen, and subsequently styled 'cottons'" was in existence in the neighbourhood of Manchester at the close of the fifteenth century. The identification of fustians with cottons at this early date is tempting, and would explain much, but it does not seem to be warranted by available evidence. As far as such evidence goes, it appears that the beginning of the fustian-manufacture has to be sought in the industrial changes of the second half of the sixteenth century, and that, in England, fustians made partly of cotton were a species of the "new drapery."

Page 10, *note* 2.—A patent was granted in connection with new draperies in 1594 and was transferred to the Duke of Lennox after the accession of James I. (Price, *ibid.*).

Page 93, *continuation of note.*—23 Geo. III., c. 21, gave bounties on the export of British printed cottons ranging from ½d. to 1½d. per yard and allowed drawback of the excise duty.

Page 99, *continuation of note.*—Defoe (*Tour through Great Britain* (1769 edition), iii., pp. 73-74, 104) has references to silk mills at Derby, Stockport and Sheffield.

Page 142, *note* 3.—It is not likely that the table (*ante*, p. 69) includes all in the country districts who called themselves fustian manufacturers. In the Directory those given in the table were described as having a warehouse in Manchester.

Page 161, *continuation of note.*—It is stated that in 1842 Crompton's children received £200 from the Royal Bounty Fund in consideration of their father's invention (*Bolton: Its Trade and Commerce* (1919), p. 80).

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